model car Science

JULY 1964 IND

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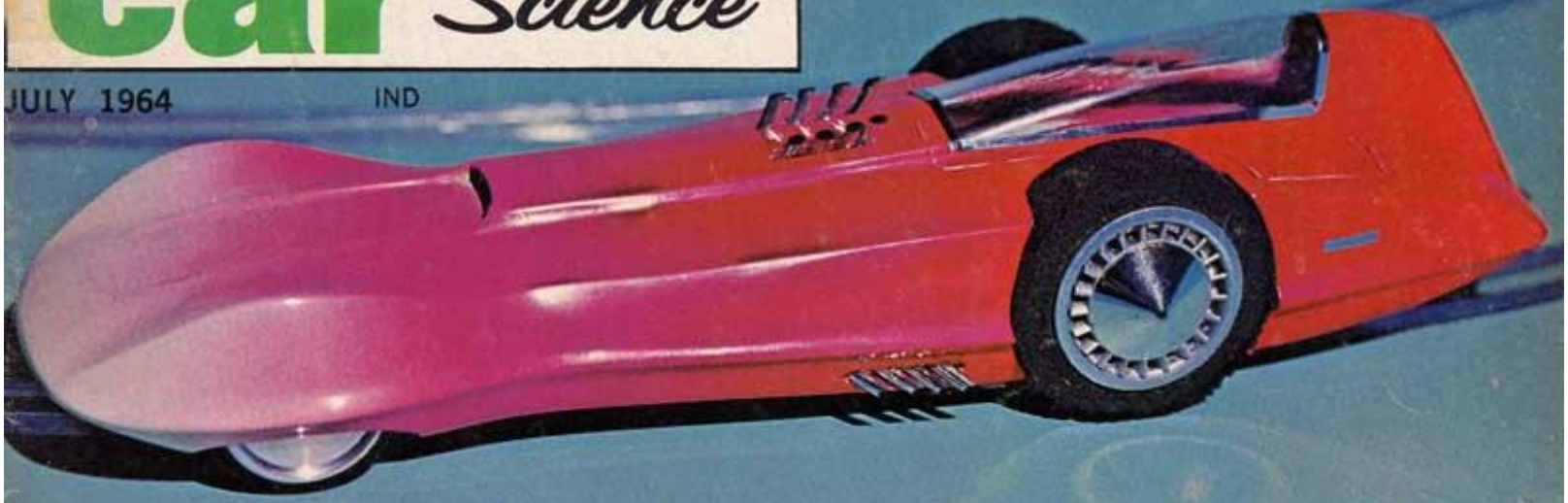

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Get started NOW in this BIG CUSTOMIZING CONTEST!

Entries Accepted at your Hobby Dealer's June 1-July 31st!

ENTER NOW!

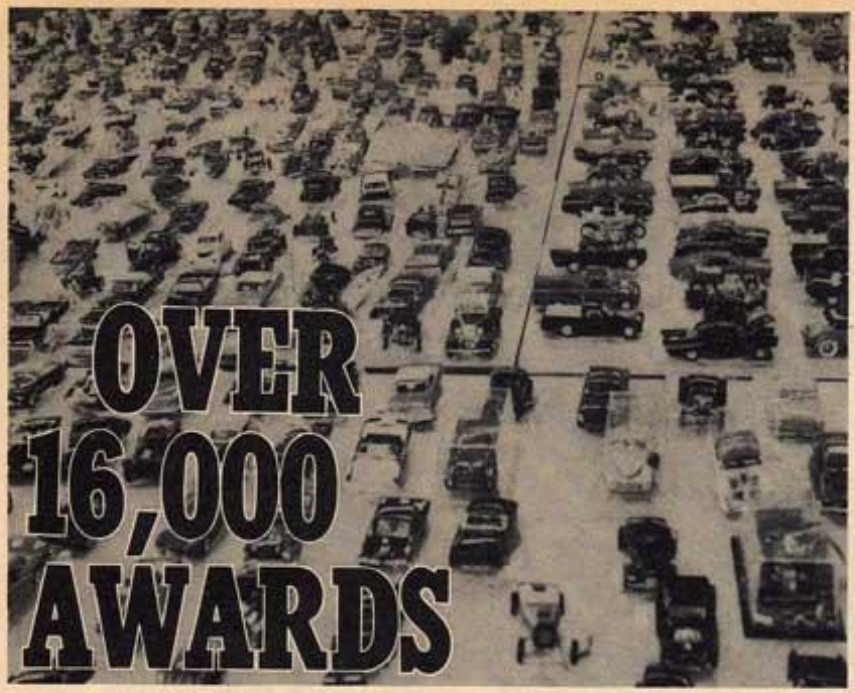
WINNERS IN THE 1st NATIONAL OPEN CONTEST

Here are the four finalists in last year's event: (Left to right) Tom Davison, Kansas City, Mo., Paints Division; Bill Christiansen, Worthington, Ohio, Junior Division; Ed "Big Daddy" Roth; Jim Ray Yonts, Pasadena, Calif., Intermediate Division; Richard Johnson, Cincinnati, Ohio, Senior Division.

Here's the news you've been waiting for ...Revell's 2nd National Open Custom Car Contest is now under way! Now you can build that custom car of your dreams and enter it in this tremendous event which, last year, drew entries from hobby shops all over the country. But get started early... the more time you allow yourself, the more features you can add to your car to help make it a winner! Don't wait until the last minute–put your skill and imagination to work right away!

GET ENTRIES IN EARLY

CONTEST CLOSES JULY 31st...



FOR TOP CUSTOM MODELERS!

With that many awards, just think how easy it should be for you to be a local winner. And, remember, local winners enter regional contests . . . regional winners enter the National Contest and have a chance for top awards. Each of the four Grand Prize Winners will fly with the companion of his choice on American Airlines to fabulous Disneyland where they'll have an all-expense-paid holiday. While in California, they'll take a tour of the Revell and Pactra plants, and be the stars of a Special Awards Ceremony. They will be on television and radio and have their winning cars publicized in car and model books and magazines.

Here are Some Tips on How to Win

Spend time designing your car first before you start building. Get your imagination and creativity down on paper, then use your skill and workmanship in building.

It might be possible to win with a stocker but you'll probably have a better chance to win if you don't copy any existing car. Detail is important . . . interior, exterior, underside. And remember, it's the car that's being judged so don't dress it up with fancy scenery or put it in a special display case.

You'll think of many things you can do to be a winner. And your hobby dealer will be a source of valuable hints because, if you're a winner, he becomes one, too. So talk over your ideas with him and then start building!

MEET THE JUDGES!

ED "BIG DADDY" ROTH
the wildest custom car builder of them all. His Outlaw, Beatnik Bandit, Tweedie Pie and Mysterion are way-out show stoppers!

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builder of one of the world's most beautiful dragsters, the "22 Jr.," a show and speed winner, subject of many magazine articles.

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designer-builder of the "Cobra Ford" '64's hottest new race car.

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Look for Revell Custom Car Parts Display Rack at your hobby dealer's!

Revell

model car Science

Volume 2, Number 7 JULY 1964

Stephen D. Urette
EDITOR

George Elliott
John Lawlor
ASSOCIATE EDITORS

Bob Hoeppner
Bill Sippel
Fred Tenderich
Dick Dobson Bob Paeth
Robert Wagner
EDITORIAL CONTRIBUTORS

George Wallace
ART DIRECTOR

Tom Marinello
ART ASSOCIATE

Chan Bush
PHOTOGRAPHY

Jim Miller
EDITORIAL DIRECTOR

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MODEL MAIL

MOTOR MAGNETIZING

Various articles say to magnetize your motor before every race. But your articles, to my knowledge, have not covered how to build a magnetizing apparatus itself, and how to magnetize the motors.

Jack Merrow
Saginaw, Mich.

Someone has given you a bum steer. Motors do not require remagnetizing after each race. After a long period of time they will gradually lose their strength and require a shot in the arm by remagnetizing. If however, the motor is disassembled or the magnet removed for any reason it will require remagnetizing upon reassembly to be able to produce maximum output. Constructing a magnetizer is beyond the ability and purse of the majority of people. They are appearing in more of the shops devoted to slot racing so constructing one would be impractical for the few times they are required. Most shops only make a small charge for performing this service.

TRACK LAYOUT

I decided on one of the plans in your March issue for my table top racing course. Could this particular plan be built with HO scale prefabricated track to an HO scale four lane racing circuit?

Douglas McCashin
Regina, Sask, Canada

With minor modifications you can duplicate the layout chosen and have four lanes for racing. Due to the variation in radius of the curve sections you will have to spend some time in checking the specifications of the various manufacturers to come up with a workable combination. Fortunately, with a few exceptions, various brands of track can be easily joined allowing a wider selection of course layouts. The overall area involved will of course be smaller in H.O. scale, unless the straight sections are extended.

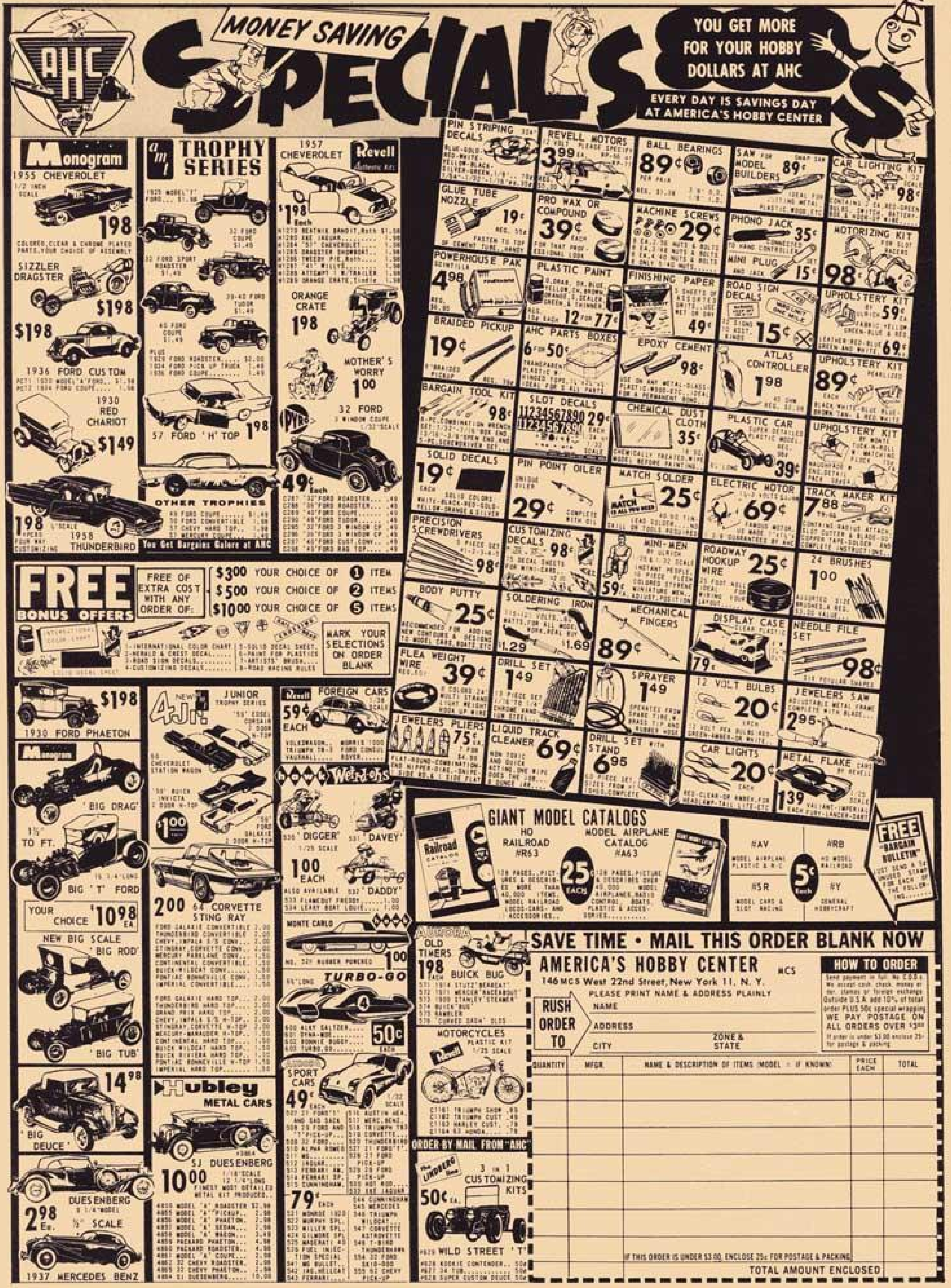
BOAT KIT BUILDER

I would like to know what boat kit they started with for the "Comfort Plus" in the April '64 issue of Model Car Science.

Darryl Kiehl
Columbiana, Ohio

The basic boat kit is made by Revell and sold as a custom drag boat. The customizing features are from various A.M.T. items.

(Continued on page 14)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Free Trip To Fair For Contest Winner

Four lucky model builders will go to the New York World's Fair this Fall as the guests of Monogram Models, Inc.

They will be the grand winners of a four-months-long Li'l Coffin custom car kit letter writing contest. The contest will close Aug. 25.

Sixty additional winners will be awarded their choice of one of Monogram's five "big" one-eighth-size custom car kits.

Details of the contest have been announced by Jack M. Besser, president.

Besser said the contest is open to boys and girls under 21 years of age. Judging will be on the basis of the best letter explaining in 25 words or less "what you like best about the model or the Li'l Coffin kit." Entry blanks will be packed in all Li'l Coffin kit boxes.

The grand winners will be given an expense-paid, three-day trip to the Fair. They also will be entitled to take one parent or other adult relative with them.

Besser said the contest is designed to tie in with Monogram's exhibit at the Fair featuring the actual car from which the kit was developed. Monogram is the only hobby kit manufacturer participating.

Table Top TRACK Operators

In coming months, Model Car Science will feature a nation-wide directory of table top tracks, their locations and times of races. This is a FREE service for our readers . . . there is no charge for this listing. Send news of your track TODAY to:

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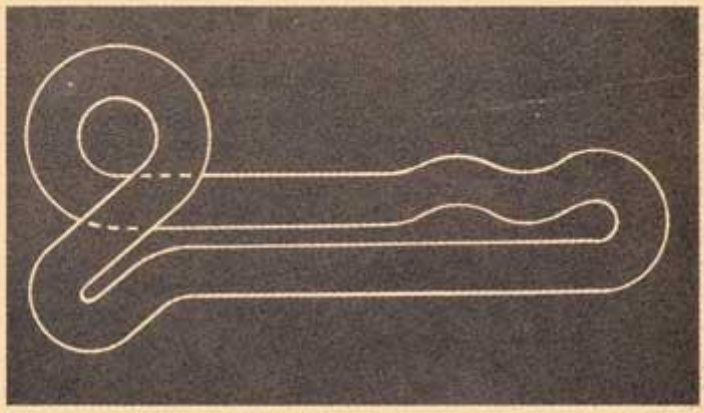

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NEW TO

Li'l Coffin, with its famous cantilevered top, has been re-created by Monogram Models, Inc., as an authentic half-inch scale model kit.

The original was purchased by Monogram and will be seen by millions of persons at the company's exhibit at the New York World's Fair. The only plastic hobby kit manufacturer to go to the Fair, Monogram has space in the Industry Serves Youth section of the Better Living Center.

Li'l Coffin is based on the 1932 Ford and has a DeSoto V8 engine with six carburetors. The $1.49 miniature version features operating doors and steerable front wheels. The mag wheels have knock-off caps and there are whitewall inserts for the tires and slicks. Interior features include head rests, a roll bar and simulated padding. Body color is a vivid plum and the interior is white. Sixty-five of the 116 parts are chrome-plated.

Carrying out the "coffin" theme, the kit also includes a white plastic skeleton that leans nonchalantly against the car with its elbow propped on the top.

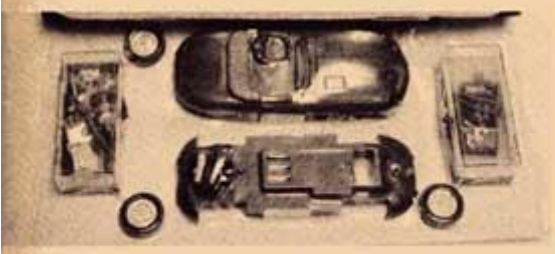
Chevrolet's newest entry in the passenger car field is now available in AMT's new 1/25th scale 3-in-1 Advanced Customizing Kit of the 1964 Chevelle Station Wagon.

This all-new wagon features Chevy's big 409 Cubic inch V-8, one of two hot engines in the kit. For racing enthusiasts, the V-8 power is backed by racing slicks, an Eelco Hot Rod Racing Shift, and a complete set of racing accessories.

In the custom version, there's a custom grille with Lucas lenses, custom hood, custom front and rear roll pans, and many other authentic restyling parts.

An additional feature of this new kit is a detailed service setup, including tool kit, engine stand, work ramp, six chrome hand tools, plus a torque wrench and hydraulic jack.

SCALE



A two speed transmission, brass pinion and steel gears, a fast, powerful, precision built KM-1 motor, permanent self lubricating wheel bearings, molded bodies and all chrome trim, are just a few of the standard items available in Varney's new 1/32 scale race car kits.

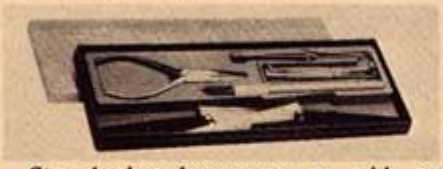
The Sting · Ray hardtop and XK-E Jaguar (track tested in the May '64 MCS), are now offered in easy-to-assemble kit form for $6.00.

Mila Miglias, machined magnesium slot car racing and drag wheels, guaranteed to be the "roundest of the round" with a maximum concentricity of .001, are now available for the serious model car hobbiest.

Designed to fit all 1/24 - 1/25 scale tires, the wheels are supplied in machined two wheel sets with a 5/40 threaded hub. Deep rims allow use with or without glue. Weight of each wheel is less than 28 grains.

Mila Miglias are precision machined of tough magnesium, and are balanced and hand polished for maximum performance and appearance. Three types are available: Series 100 solid wheel – $1.29, Series 300 5 hole wheel – $1.49, and Series 500 3 slot wheel – $1.79.

Sets may be purchased at local hobby stores or from C&O, Ltd., Box 74431, Los Angeles, Calif., 90004.



Strombecker has come up with an assortment of tools for car customizing, model building and repair work requiring small precision tools. The $4.95 kit includes a Hobby Knife, set of 3 Screwdrivers, Keyhole Saw, Razor Saw, Criss Cross Tweezers and a Needle Nose Pliers. The unique Hobby Knife features exclusive plastic collets attached to the blades, guaranteeing the elimination of blade slippage. Keyhole and Razor Saws have a blade design that allows unlimited depth in a straight cut. Screwdrivers are designed with swivel heads for better control.

TRACK BRAID

Where can I buy braided wire for the road racing track I am currently building?

Patrick M. Ostrenga
Milwaukee, Wis.

Tin coated copper braid is by far the most acceptable and trouble free installation for your track. It is basically an electrical supply house item and is used widely in the electronics industry as a shielding on wire or as ground straps for various installations. Try some of the outlets selling electronic components for radio-T.V. or ham builders. They all carry it.

DUAL ENGINES

While reading your Dec. issue I saw a car with two Microperm engines. I have heard a great deal about this engine and I wish to purchase one. I would be very grateful if you could send me the address of a hobby dealer that carries or could get this engine.

Don Hollinger
Bloomington, Minn.

The Microperm motor is imported so is not carried by all the shops. Other than AHC, Auto World, or Polk's in New York City, I know of no one closer to you that stocks them. Perhaps your local hobby dealer could get a pair for you.

SCALE PROBLEMS

Will 1/32 scale cars operate on 1/30 Scalextric track which is 6⅛-inch wide?

Doug Chapman
Pontypool Ont., Canada

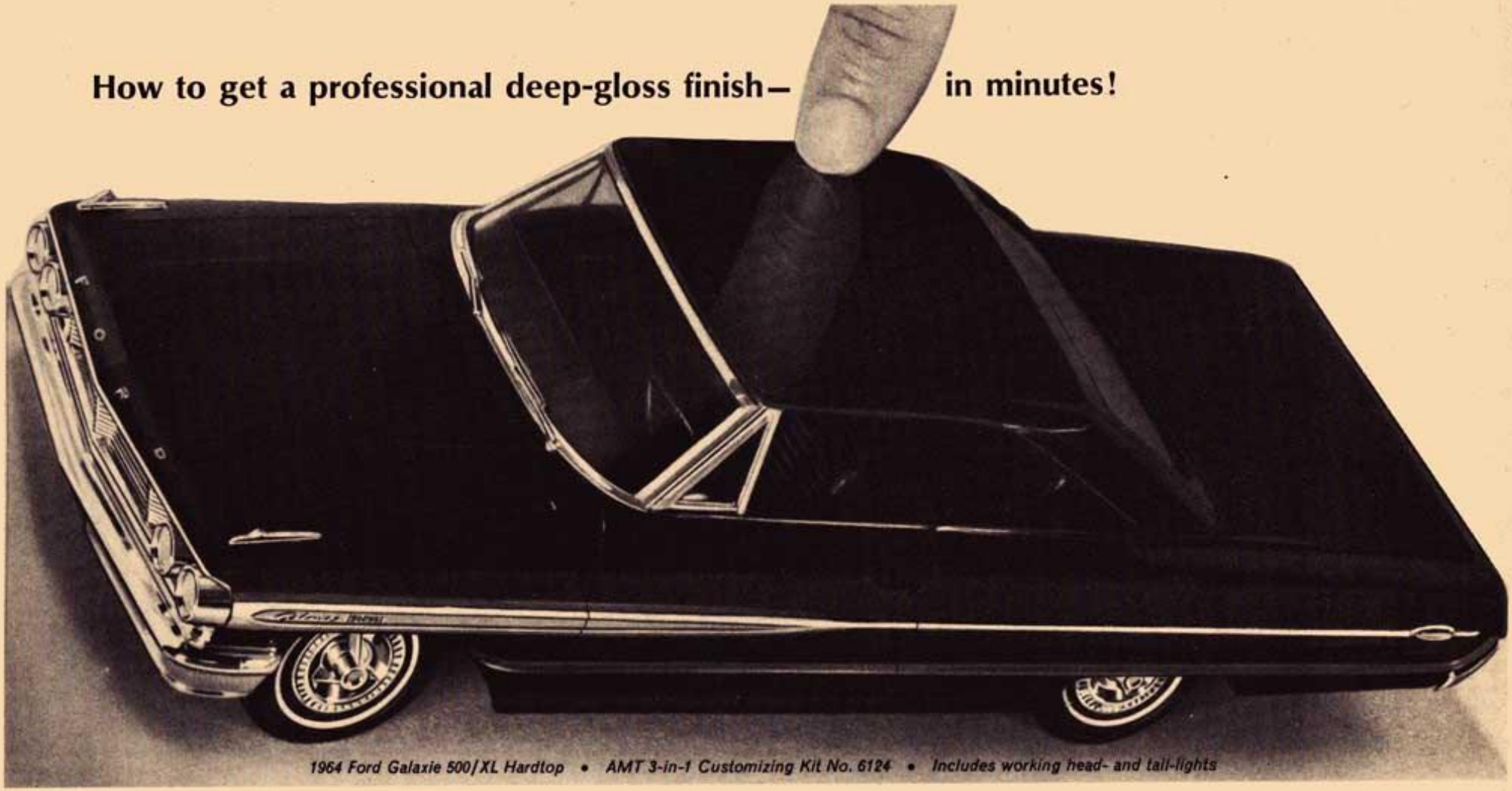
I have an old Aurora set and want to change to 1/24 or 1/32 scale. I don't know which size to go into. Is it possible to run both on the same track?

Bill Harrington
Lincoln, Nebr.

Yes, 1/32nd scale cars are very close to the same size as 1/30th and will operate on the same track with no limitations as to physical size. Guides or pick-ups may have to be slightly altered to match the Scalextric track.

Choosing a scale in which to build your stable of cars will depend somewhat upon the types and size of tracks you will run on. Any track with three inches between lane centers will allow running either 1/32, 1/25 and 1/24 scale cars. However, you will find that if you are using commercial track such as Strombecker that the larger cars will drop wheels over the edge of the track on turns, due to their longer wheel base and the lack of sufficient skid area. The 1/32 cars, being smaller, are more at home on this type track. If you have a custom made track, as most clubs and hobby shops use, this is not a problem and either scale will operate equally well.

How to get a professional deep-gloss finish— in minutes!



1964 Ford Galaxie 500/XL Hardtop • AMT 3-in-1 Customizing Kit No. 6124 • Includes working head- and tail-lights

Make your model a standout from every angle! It's easy when you know how. The trick is proper planning and preparation—and making sure your finishing touches are made with new AMT Custom Spray Lacquer, the *only* lacquer specially formulated for use on plastic.

First, you prepare the surface by sanding it thoroughly with wet sandpaper; then wash away dust and powder with water and get your model completely dry. Next—in a clean, dry room—spray lightly from 10 to 12 inches away. Don't even look for color at first, you're laying a base for later passes. Gradually add more coats, letting each one dry before starting the next a few minutes later. Move in closer for the last few coats, about six inches away. These final, heavy coats will each take 5-7 minutes to dry . . . leaving your model with a professional deep-gloss sheen. And if you really want to get the "judges" nod, you can buff it up to a mirror-like finish. Just ask George Barris, King of the Kustomizers, who helped develop custom spray lacquer exclusively for AMT.

Now you can choose from thirty wild colors—in Metallic Lustre, Solid Gloss, Kandy Kolors and One-Step Metal Flake—four fantastic custom finishes! Look for AMT Custom Spray Lacquer wherever you buy AMT 3-in-1 Customizing Kits.

To make it really authentic . . . make it AMT

amt

AMT Corporation • Box 55 • Troy, Mich.

TWOFER T-BIRD

Here's a practical dream car, developed exclusively for MCS, with styling that is daring and different yet in keeping with the times.

by Don Lenaker

TO START construction of this Exotic Thunderbird, obtain two AMT '64 T-Bird convertibles. Cut both bodies 11/16" from rear door lines. Use masking tape as guide when cutting with razor saw. Any width of tape will be suitable. After bodies are cut, set aside both front ends.

The next few steps should be done to both rear sections unless otherwise directed.

Measure 1-1/4" up rear deck near the slight indentation. This portion of deck should be removed with razor saw.

Locate custom tail light housings found in T-Bird kit. Remove center piece attaching both housings. File each separate housing to final shape. Glue each individual housing onto bodies.

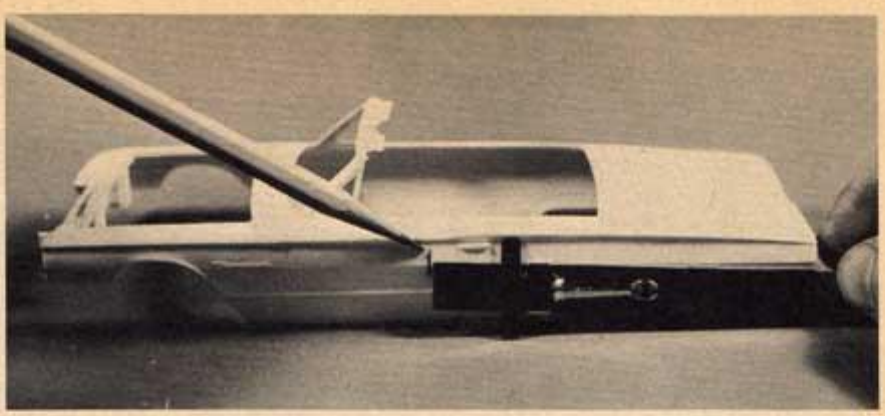
Obtain small deck scoop from T-Bird kit. Glue scoop to underside of deck where portion has been removed. Be sure to do this operation to both rear sections. Next step is to locate Tonneau cover and glue into place on only one rear end. This section will become the rear of the Exotic Thunderbird. Bodies can now be puttied in, or this may be done after bodies have been joined together. When puttying in bodies be sure to cover up all reworked areas. Deck scoop should have putty on underside so as to give support when sanding. Do not putty under front light housings as this will have to be reworked when wheel wells are relocated.

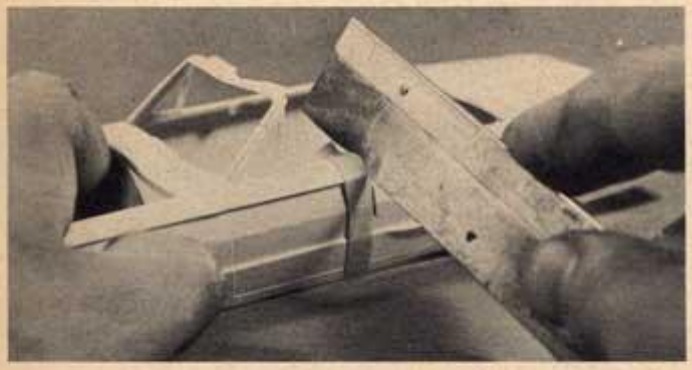
Take one of the previously set aside front ends and remove windshield and cowl area, leaving approximately 1/8" on sides. With pencil trace this cowl area on front portion as shown in picture. Cut out and file this marked area. Windshield, windwings and braces can be removed now or later. Now file both front and rear sections until they fit neatly together before gluing. When gluing use an extra amount to be sure of a strong bonding. Putty in sides, including fender skirt lines and all other reworked areas. Allow body to dry thoroughly before going on. Sand these areas completely with 320 wet and dry sandpaper. Use X-Acto aluminum sanding blocks, or a wood block can be improvised. This will save time and eliminate low spots from reworked contours.

Doors can be located now. Rear of door is directly across from front of Tonneau cover. Cut vertically down to last body ledge and measure 2" forward. Front cut is to be made on a 45 degree angle in order to let door open properly.

Front wheel wells are too close to the center of body, giving an unfunctional and unpleasant effect. To fill in these wells, locate any thin scrap plastic, or large hood scoop from T-Bird kit can be used. Place this plastic inside wheel well of car and trace well out with pencil onto plastic. Cut this piece out carefully and file for a tight fit. This piece can be used to trace well for other side. Glue

1. Two '64 Thunderbird kits by AMT will be needed to construct this model.

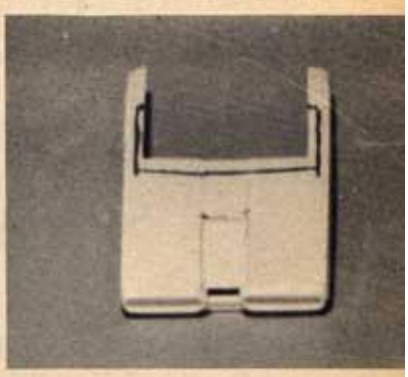




2. Measure 11/16" in front of rear door line on both bodies.

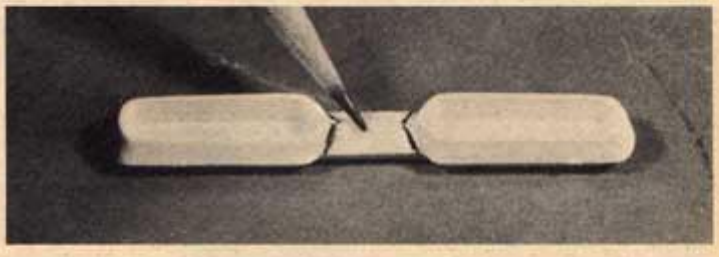
3. Using masking tape as a guide line, cut bodies in half with razor saw.

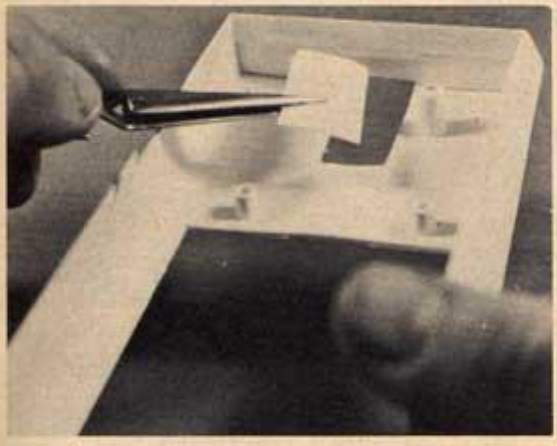
4. Measure 1¼" up rear deck where slight indentation is and remove this piece.



5. Remove center piece from custom taillight housings. File these pieces for final shape.

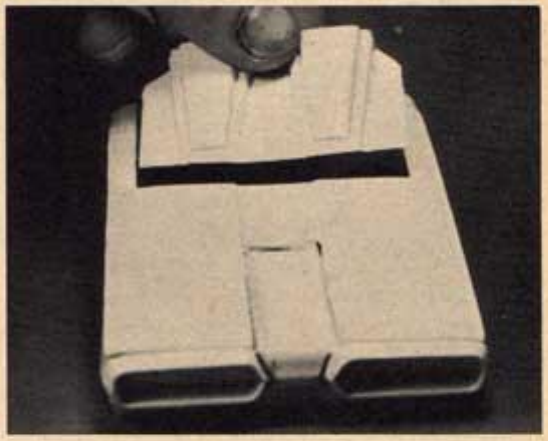
6. Body is shown with new housings ready to be installed.

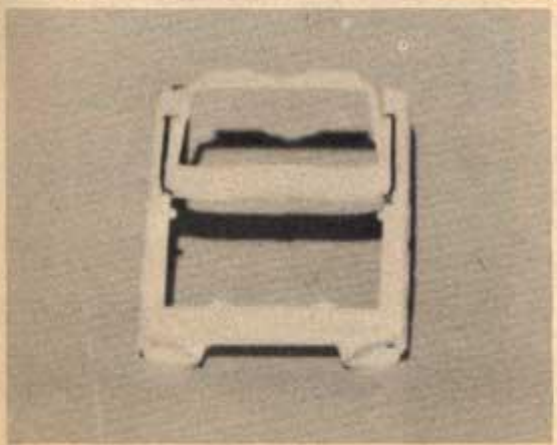




7. Insert rear deck scoop to the underside of deck.

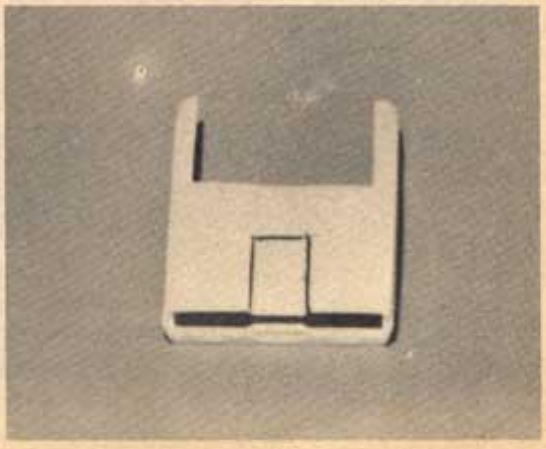
8. Glue Tonneau cover in place.





9. Remove windshield and cowl area with razor saw or jeweler's saw.

10. Trace cowl outline to one of rear ends. Cut this area out and file until cowl fits tightly.



these pieces in place and let set up; then apply putty. This area should be sanded with sanding blocks also.

To locate new wells, first assemble T-Bird frame. Front wheel coverings will have to be removed. No other frame alterations will be needed. Place frame under car and attach at rear to hold in place. With pencil, mark both in front and behind wheel. Using full size template, trace new wells to car using guide marks. New wells can be cut out with jeweler's saw, razor saw, or just filed out to finished shape.

Now that wheel well has been located, front end can be rolled under. With razor saw cut in front of wheel well up to bottom of headlights. Saw along front edge up to previous cut. Remove this triangular piece from both sides. Using scrap plastic wide enough to reach front of wheel wells, glue this piece in place. At this time putty in complete nose area.

The Exotic Thunderbird should be made with a removable roof for all weather conditions. Use fast back roof found in T-Bird kit. Remove small tabs along bottom of roof to give a flowing appearance. File and sand reworked area until smooth.

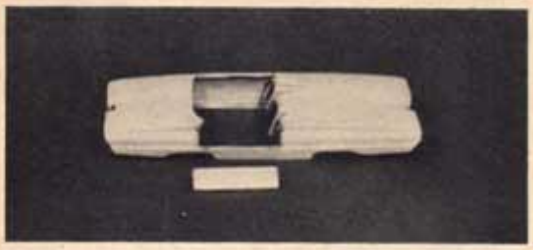
Interior is adopted from '58 Impala by AMT. Custom front panel, floating instrument bar, console, door panels, bucket seats, and floor boards are used. Front panel has sides removed. Floor board has rear seats removed and tabs on front removed. Inner door panel backs have been cut out. These pieces are glued between Tonneau cover and body sides. Putty in this area, shaping it with fingers. Tonneau cover will not adapt to Impala bucket seats without filing for needed clearance. Front panel is glued under cowl, leaving enough room for windshield to be glued on. Windshield sides have to be removed since there are no windwings on car. Floor board is to be glued to front panel. Interior can be finished up in many different fabrics. Some hints can be found in past issues of MCS.

11. This body portion will be the front end of the new T-Bird. Windshield can be removed now or later.

12. Both bodies should be carefully filed to match together and then glued.

13. Saw directly across from Tonneau cover to get rear door line. Measure 2 inches forward.

14. Saw on 45 degree angle downward.

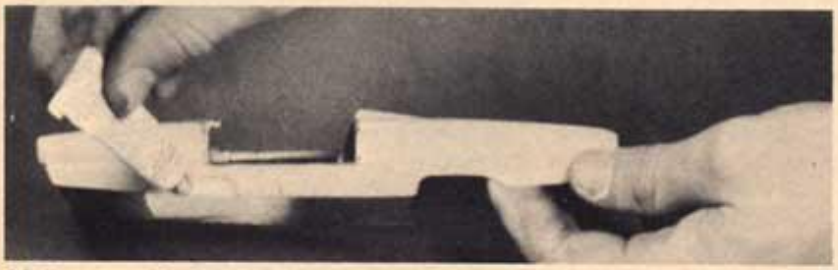


15. Door is shown removed. File edges smooth to remove saw marks.

16. Using scrap plastic, trace wheel well on it.

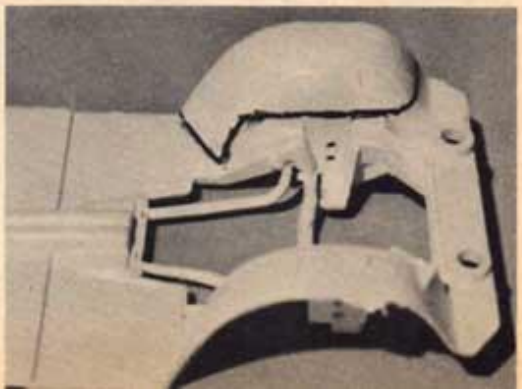
17. With saw or knife carve out this piece.

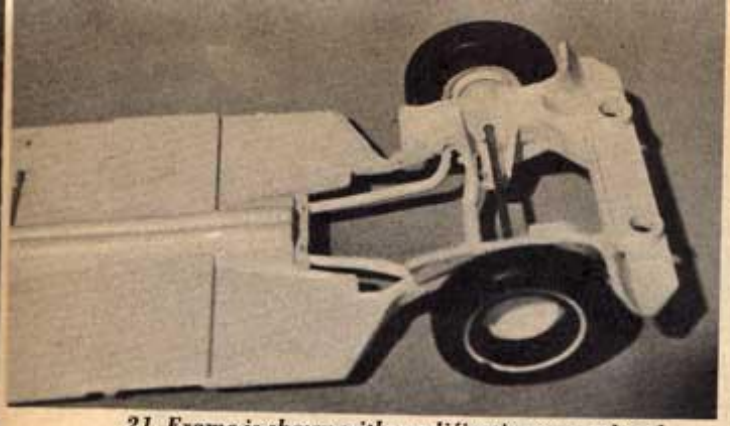
18. Glue this piece into wheel well.



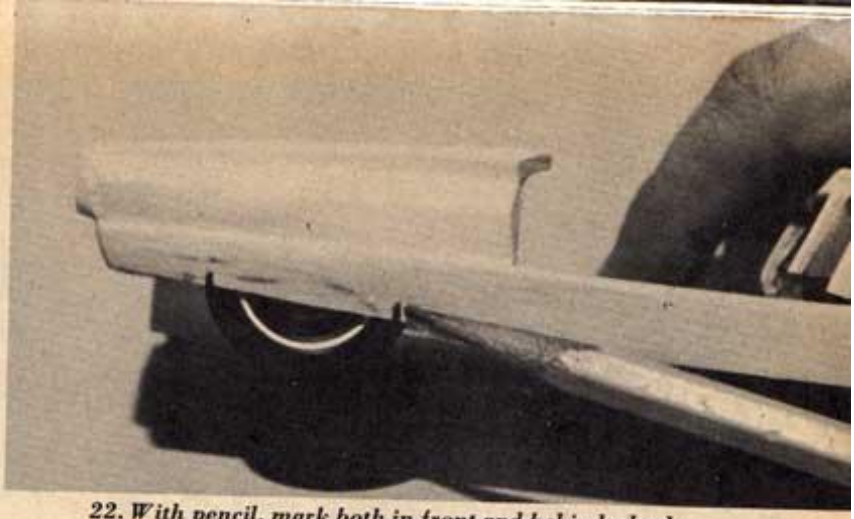
19. Putty in old wheel well and use enough to allow for shrinkage.

20. Remove wheel coverings from both sides with razor saw.





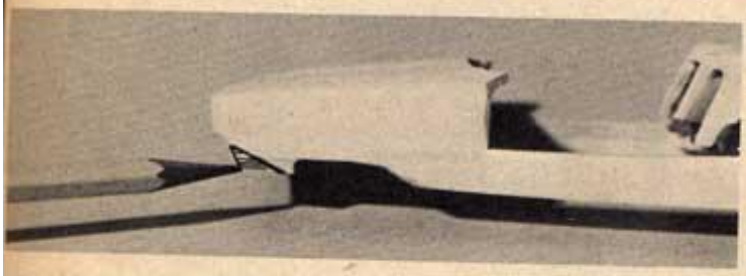
21. Frame is shown with modifications completed.



22. With pencil, mark both in front and behind wheel.

23. Using full size template, trace new wells to car using guide marks. This can be sawed out or cut out with knife.

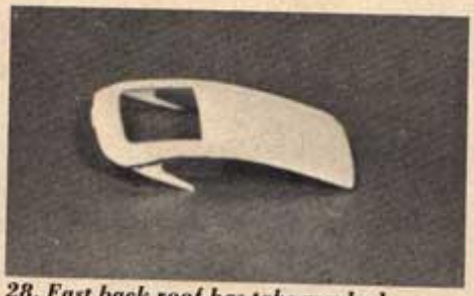
24. New wheel wells should be filed to final shape.



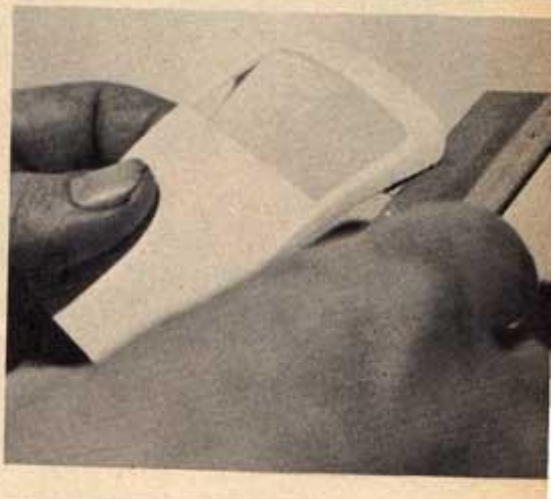
25. Marked area should be removed with razor saw.

26. Scrap plastic is being shown glued in place.

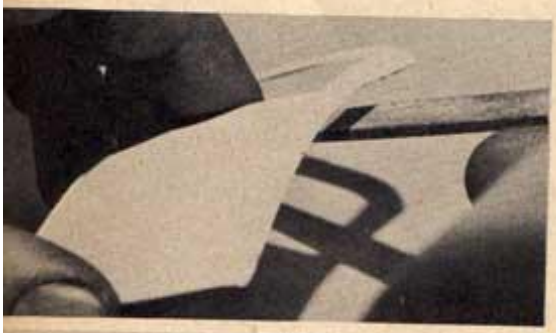
27. Putty new rolled pan completely.



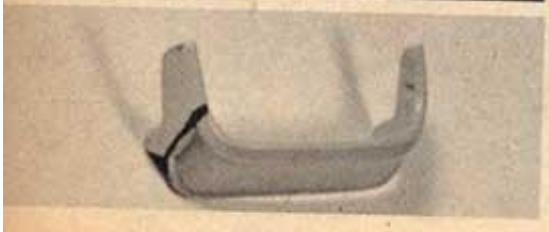
28. Fast back roof has tabs marked and ready to be removed.



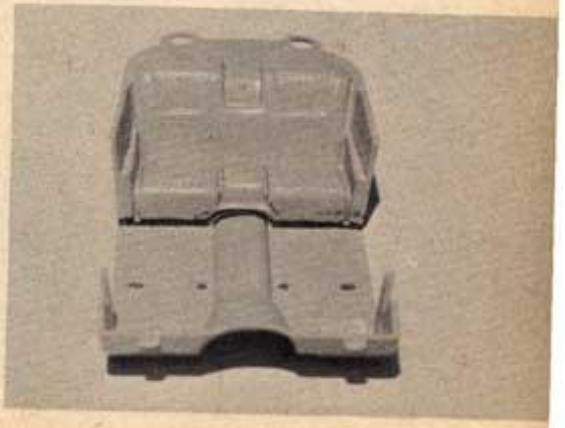
29. Roof tabs are being removed with razor saw.



30. After tabs have been removed, file roof area smooth.



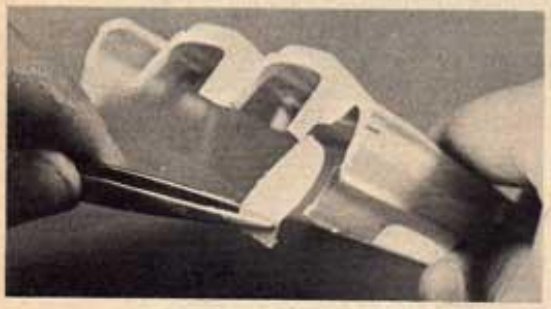
31. Front panel has sides marked and ready to be removed.



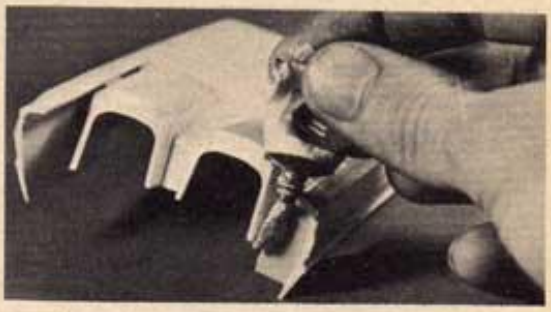
32. Interior package is shown ready to have rear seats removed.

33. Front tabs should be removed at this time.

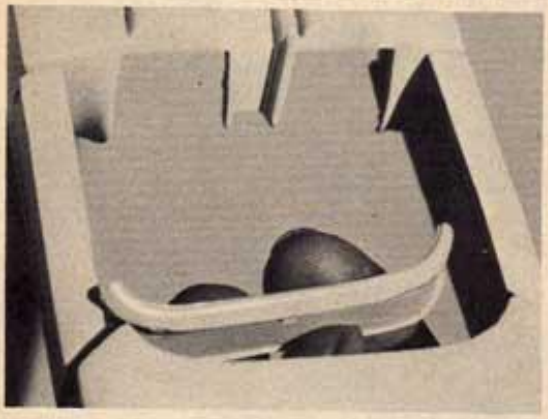
34. Back of door panel is marked where it is to be cut out.



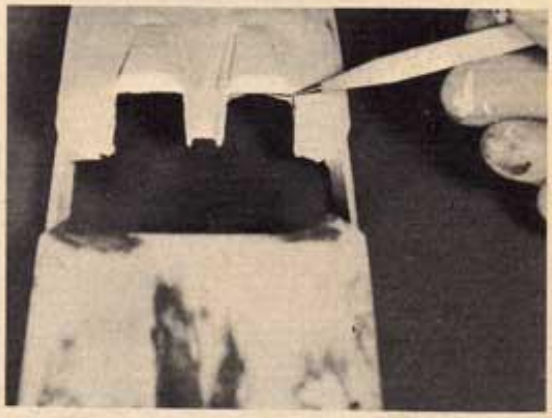
35. Interior back is glued between Tonneau cover and body.



36. Area is shown being puttied in.

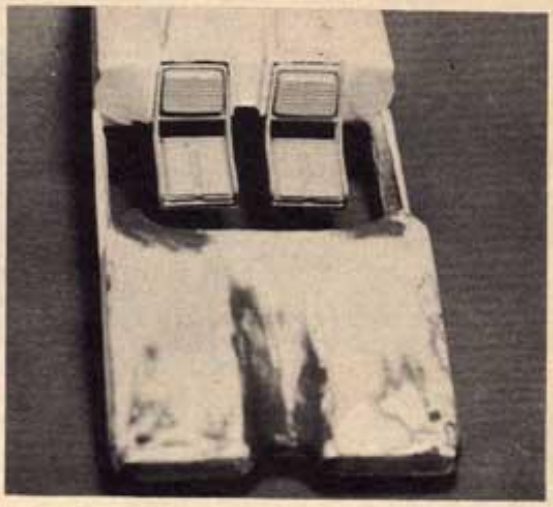


37. Front panel is shown being glued into place.



38. Tonneau cover back is marked to be filed to adapt bucket seats.

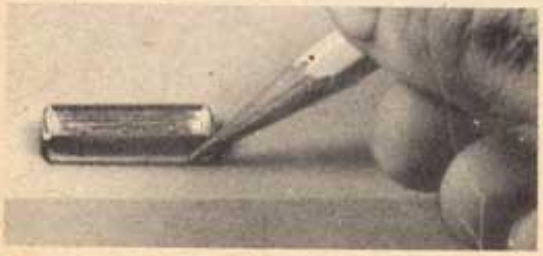
39. Tonneau cover is shown being filed.



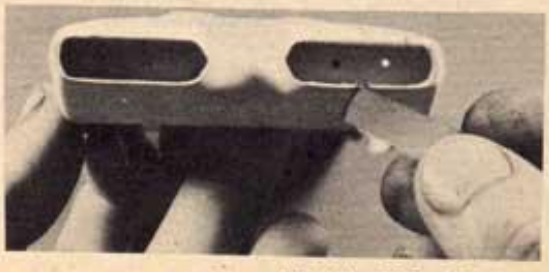
40. Bucket seats are in proper place to check proper alignment.

41. Inner chrome rim is shown having outer bumper being removed.

42. Chrome taillight rims, are shown ready to be installed.



43. Using taillight rims trace onto clear plastic or frosted plastic for head light lenses.



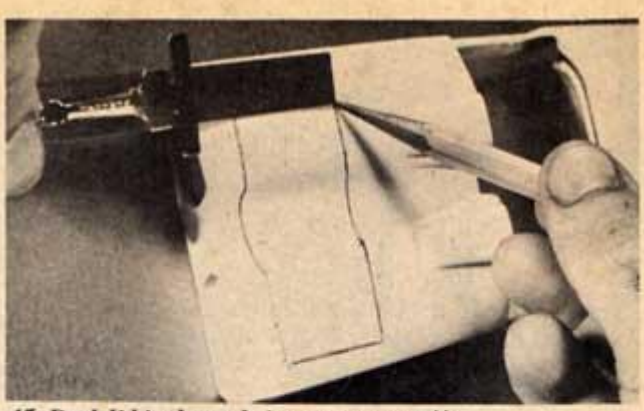
44. Headlight lense is shown being placed into body.

Taillights are from stock T-Bird. Chrome rims inside bumper are removed as shown in picture. Use care in cutting rims out as chrome rubs off and scratches easily. This combination works nicely in taillight housings. Front lenses are made from clear plastic cut out of optional clear top in kit or frosted plastic. By tracing around rear lenses, these can be used as a pattern for front lenses. Taillight chrome grill looks nice over front clear lenses.

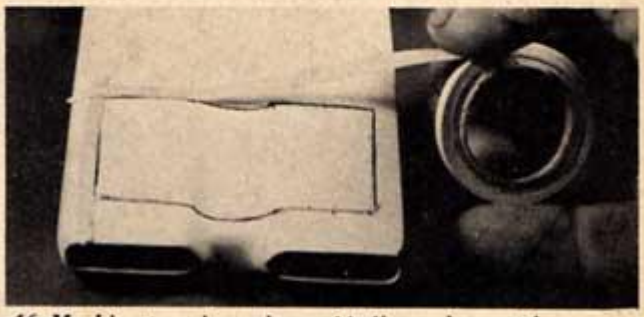
Engine should be located in the rear for most practicability, although it could be located in front. Engine to power this Exotic Thunderbird is of the builder's own choice. Since the engine is located in the rear, turbine-power would be a very practical installation. Deck lid can be opened or just scribed in with razor saw. Measure 1/4" from sides and 3/8" from taillight lenses. Length of deck should be about 1-1/4".

Body should be sanded out with 600 wet or dry sandpaper and given a heavy priming job. Any spots that still need work should be taken care of now and reprimed. After paint job has been applied, doors should be hinged. Auto World hinges which can be located at hobby shops or through writing to Auto World, Box 961-M8, Scranton, Pa., will work well in this situation. The long brace should have 1/16" removed from each side so as to fit flat on inside of door. This is the only modification required. Doors are hinged just as shown in Auto World instructions.

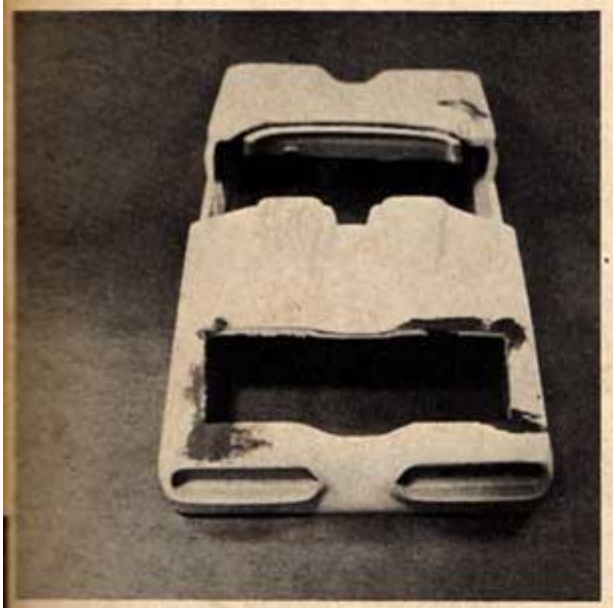
If the builder wishes he could add some other detailing, such as working head-lights and taillights and, possibly, interior lights.



45. Deck lid is shown being measured off.

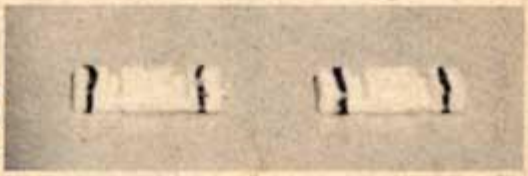


46. Masking tape is used as guide lines when cutting.

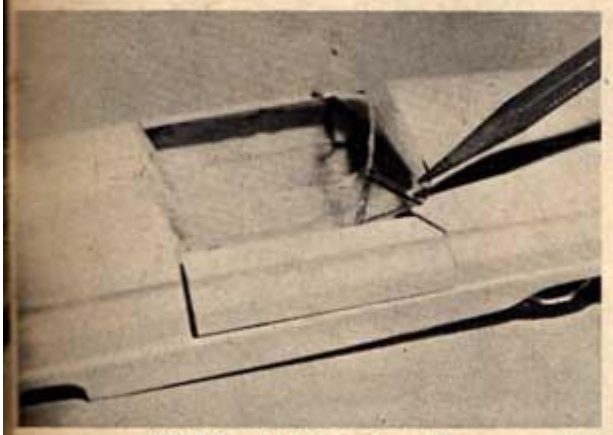


47. Deck lid is cut out, and saw marks are puttied in.

48. Auto World hinge brace has 1/16" removed from both edges.

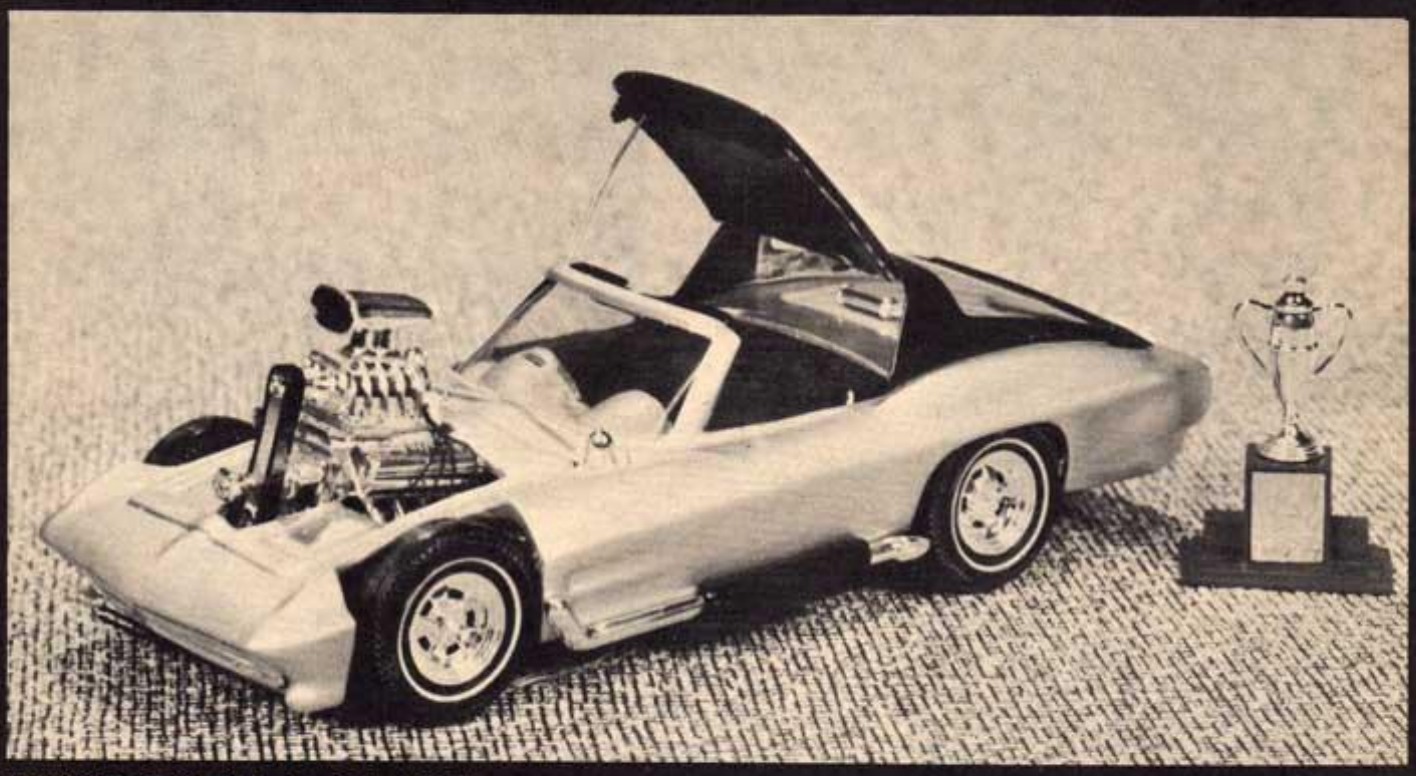


49. Door is shown with hinge glued in place.



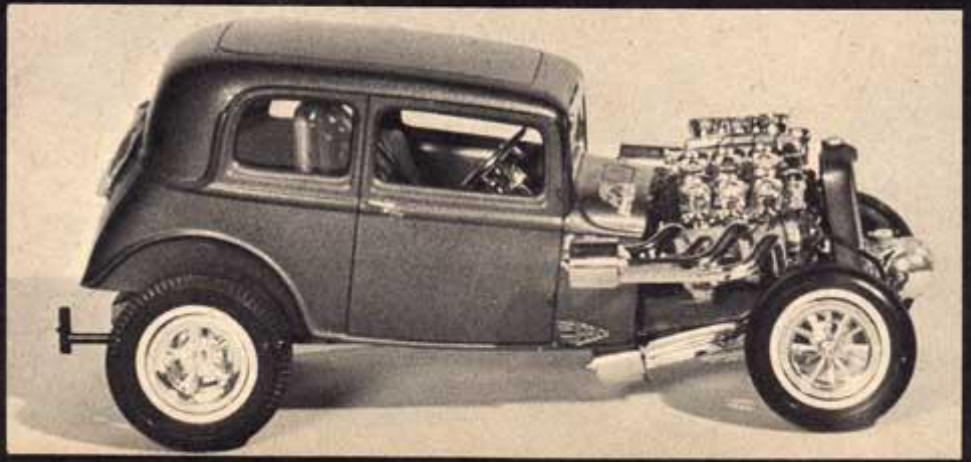
50. Windshield requires edges removed, as there are no windwings on car.

MCS CONTEST WINNERS

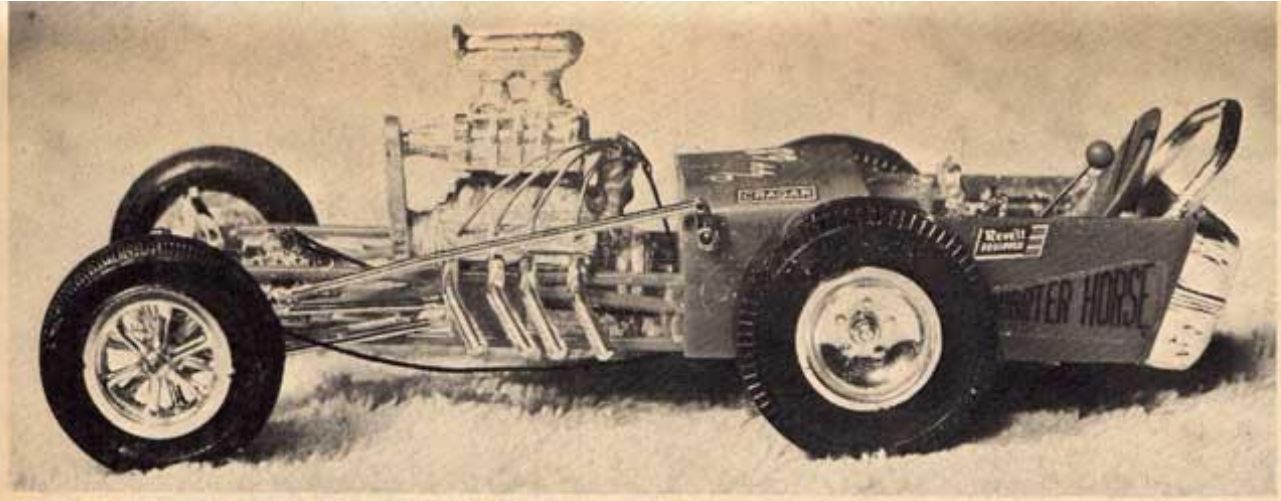


"My Silhouette" built by Don Culp, 416 E. Ash, Blytheville, Arkansas receives the First Place Award this month and a $25 Savings Bond. Don started with an AMT '64 'Vette, added a custom top, black grain leather interior and a blown Chrysler that is completely wired.

Stuart Gilman, of Chicago, Ill., did an outstanding metal flake paint job on this 1961 Chrysler Newport convertible. Color is purple.

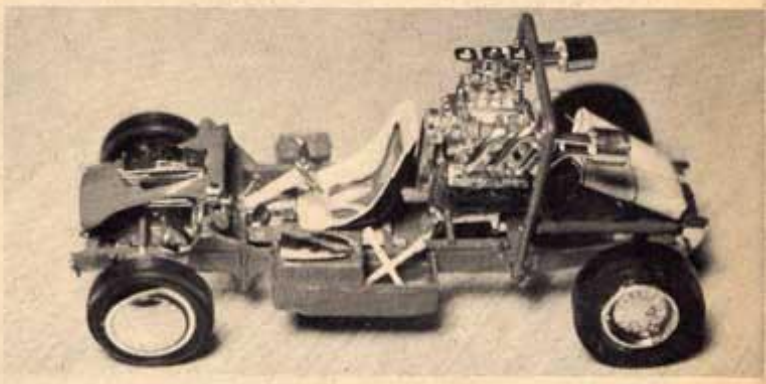


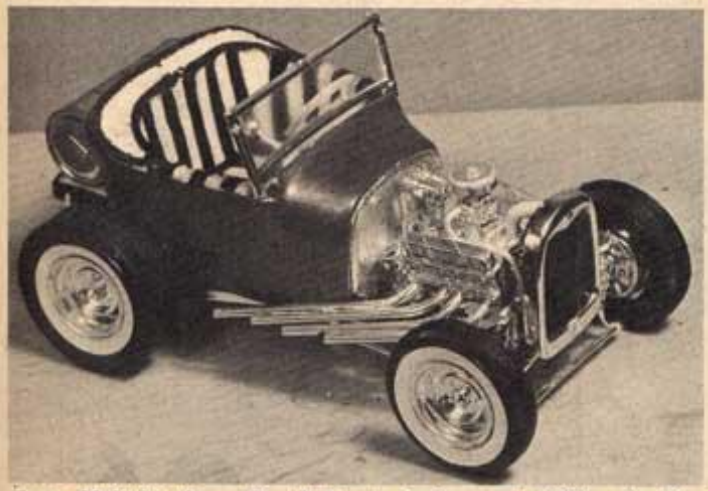
Ft. Worth, Texas modeler, Steven Leyh put two '64 Ford 427's with six two's on each engine in this '32 Ford Victoria. Both engines are wired. Car also features a slight rake.



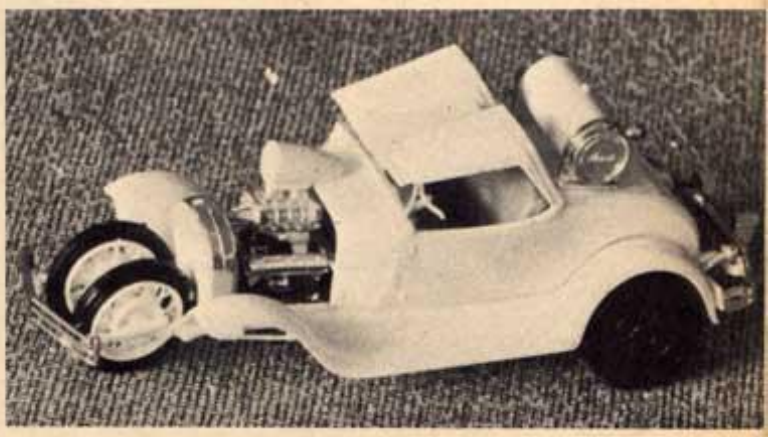
"Quarter Horse" by Mike Redd, Wichita, Kansas, is made from: Revell's Custom Car Parts engine, wired with aluminum wire, a Double Dragster kit body, and bucket seats from the Altered Fiat kit. It has a fully chromed undercarriage.

New Jersey modeler, John R. Young calls this one "Little-Bit-of Each." Frame is from a '53 Ford truck, and it has a blown Chrysler engine, 3 duces, chrome exhaust manifolds, with the balance of the parts from almost every kit John ever worked.

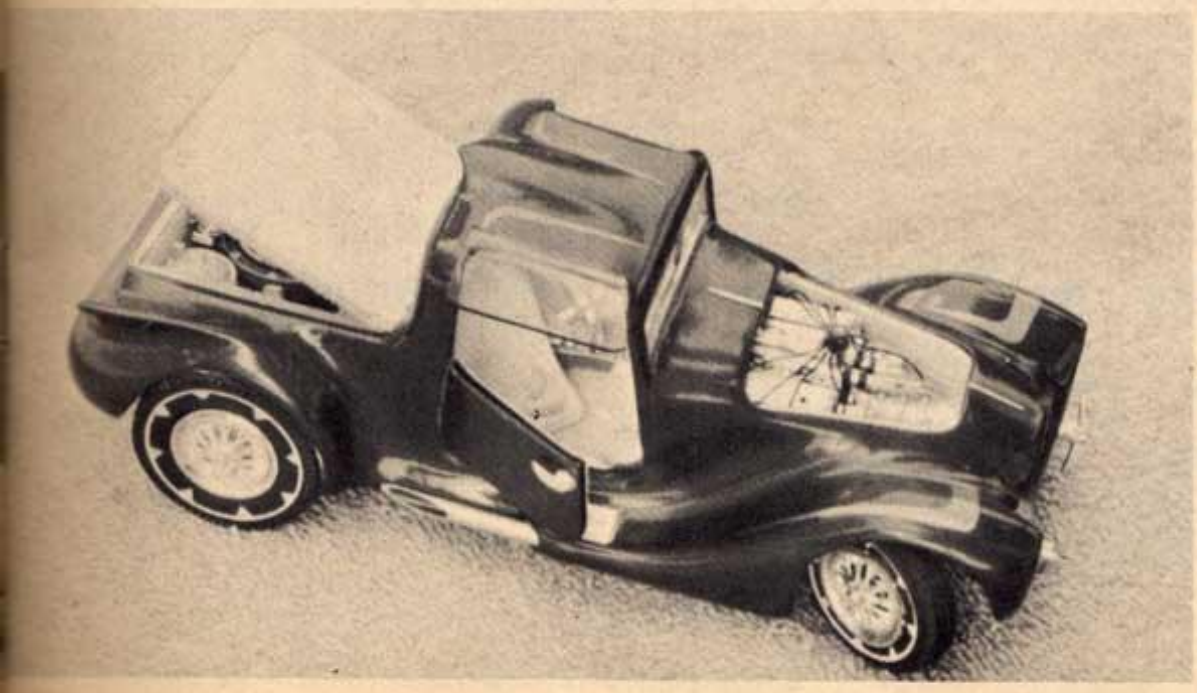




Dave Malicki, from South Bend, Ind., used AMT's Ala Kart body, frame, and wheels, the 283" Chevy engine. Two coats of Pactra's base gold and nine coats of Testor's transparent red were used on the exterior. Engine is fully wired.

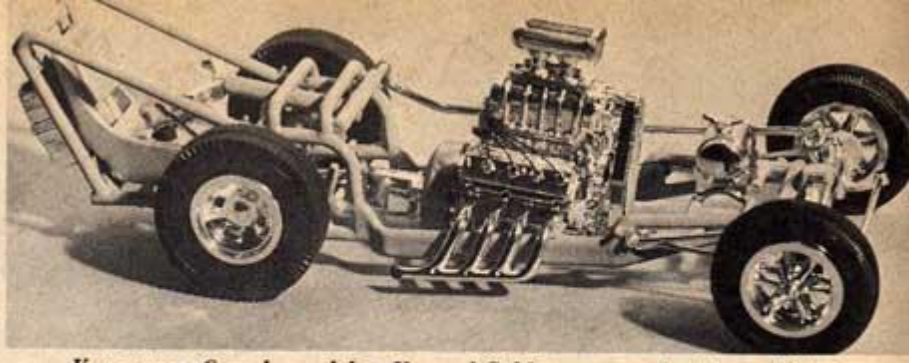


Using a seat cover for a top, Peter Sporer of Detroit, Mich., created this unique model in 1½ days. Front wheels were removed and remounted up front of the 'Vette engine.



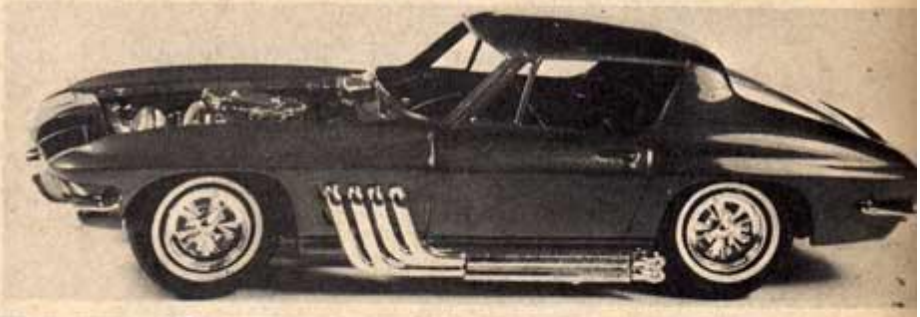
Stock fenders are molded to the body of this '32 Ford pickup created by Jerry Stroup. Windows are molded from clear plastic. Mill is an Olds, (blown) with fuel injection. Interior is white corduroy.

Front end of this '53 Ford pickup has been radically molded. Interior and bed have been upholstered with corduroy. Builder of this candy blue hauler is Mark Folsom, from North Agusta, S.C.



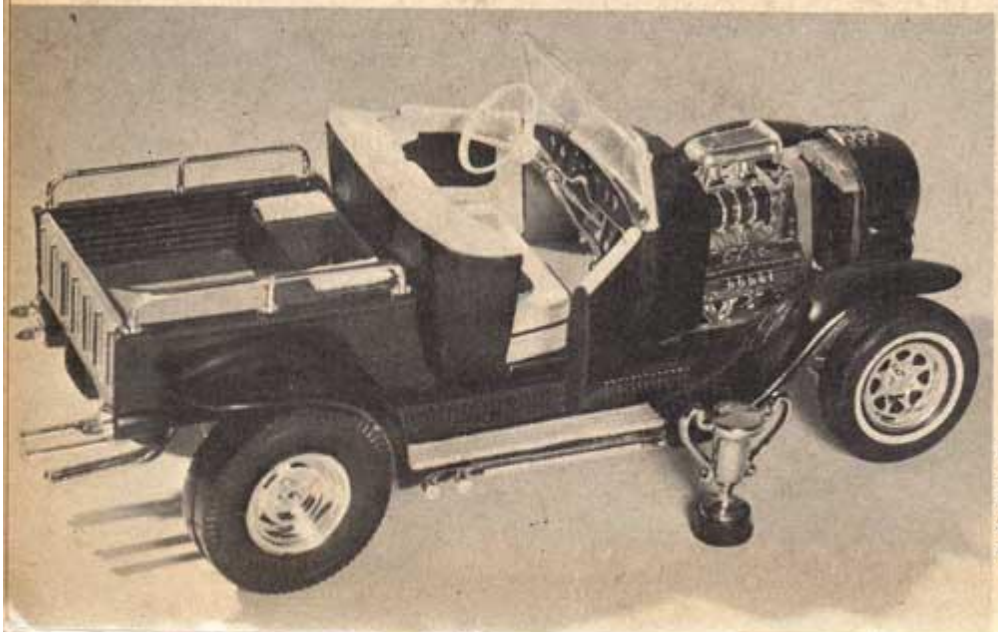
Vancouver, Canada modeler, Howard Goldman, started with an AMT Double Dragster kit and added a Revell '58 Chrysler mill, mag wheels from a '57 Chevy and Fairlane buckets.

John Hunt sends us this '64 Sting Ray fastback from Cedar Grove, New Jersey. Engine has been completely wired and color is candy blue.

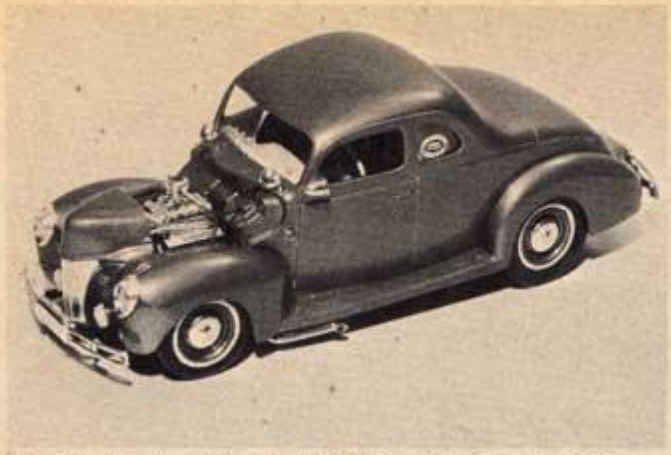


"Big Red," built by Jerome A. Miller from Goshen, Ind., started out as an AMT '63 Ford pickup. Rear end has been shortened and raised with axle and springs from Revell Custom Frame.

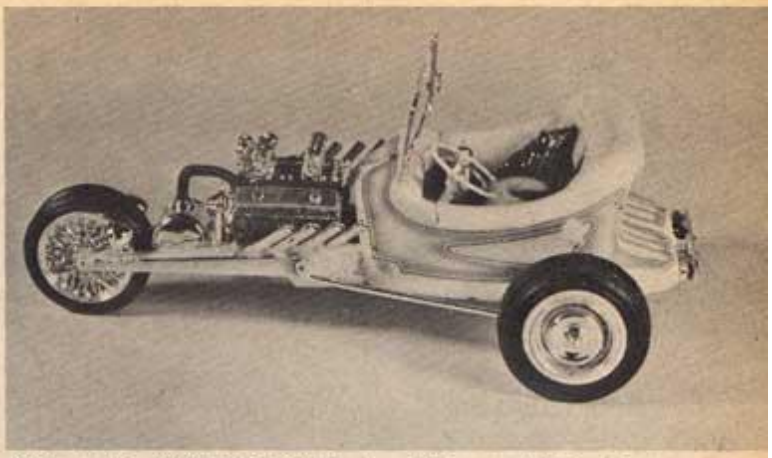
This great '34 Ford tow truck has an all chrome mill and interior is fully detailed including a two way radio with a whip antenna. Owner is Mark Macreading, from Warwick, Rhode Island.



Eight coats of black lacquer top this gleaming Ala-Kart. David J. Penn, from Webster Groves, Mo., added opening doors, custom interior, and a cloth top (not shown) to this entry.

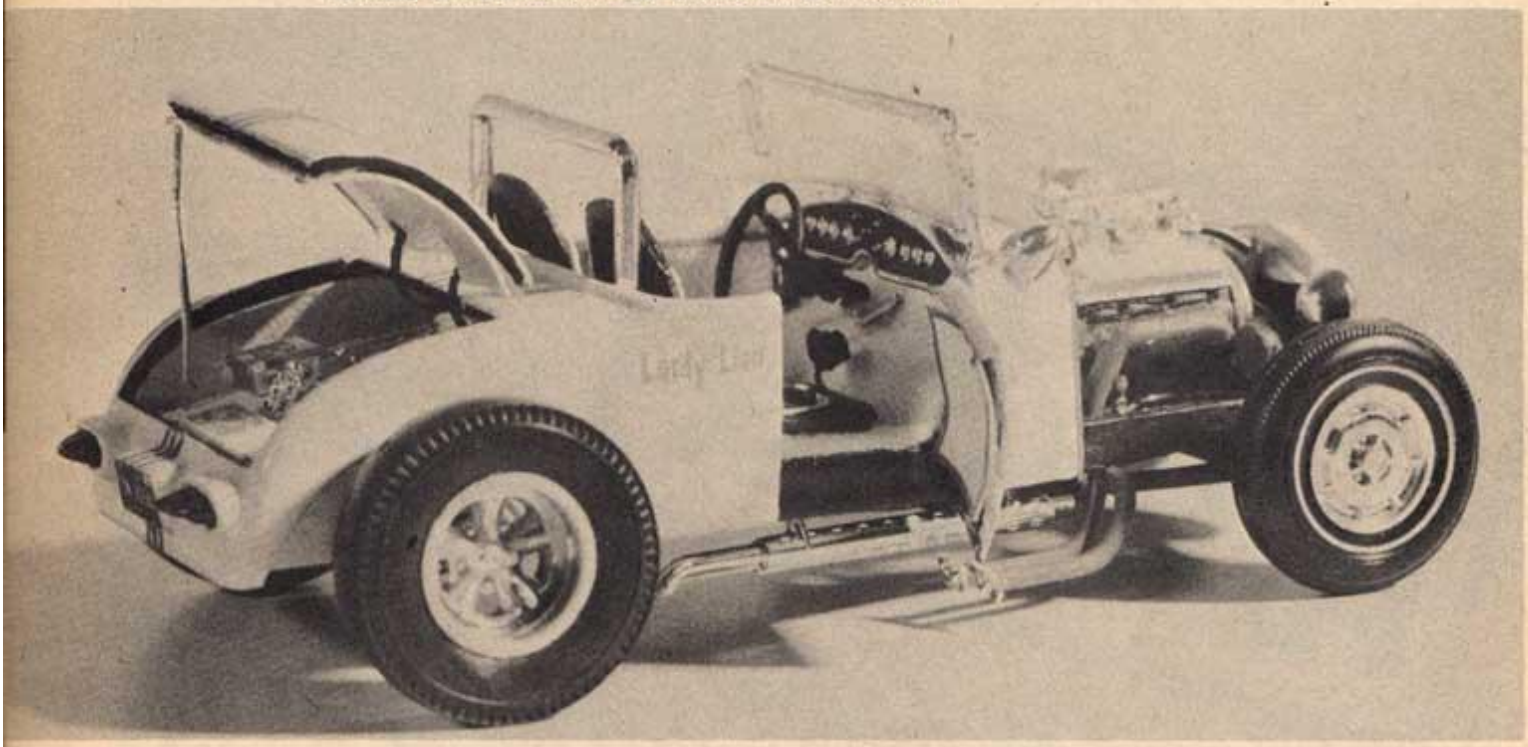


Just the front section of the '40 Ford hood was used by Akron, Ohio modeler Robert Norman, on this creation. The 401 Buick mill has T-bird valve covers.



This model of Ed Roth's Outlaw is not the usual, but rather a well engineered combination of kit and spare parts. New Bedford, Mass., builder is Richard Gonsalves.

Extreme body and engine detailing mark James Furst's entry this month. This '29 Ford has opening doors and trunk and a fully wired, 'Vette mill.



a MODEL CAR SCIENCE *Contest*

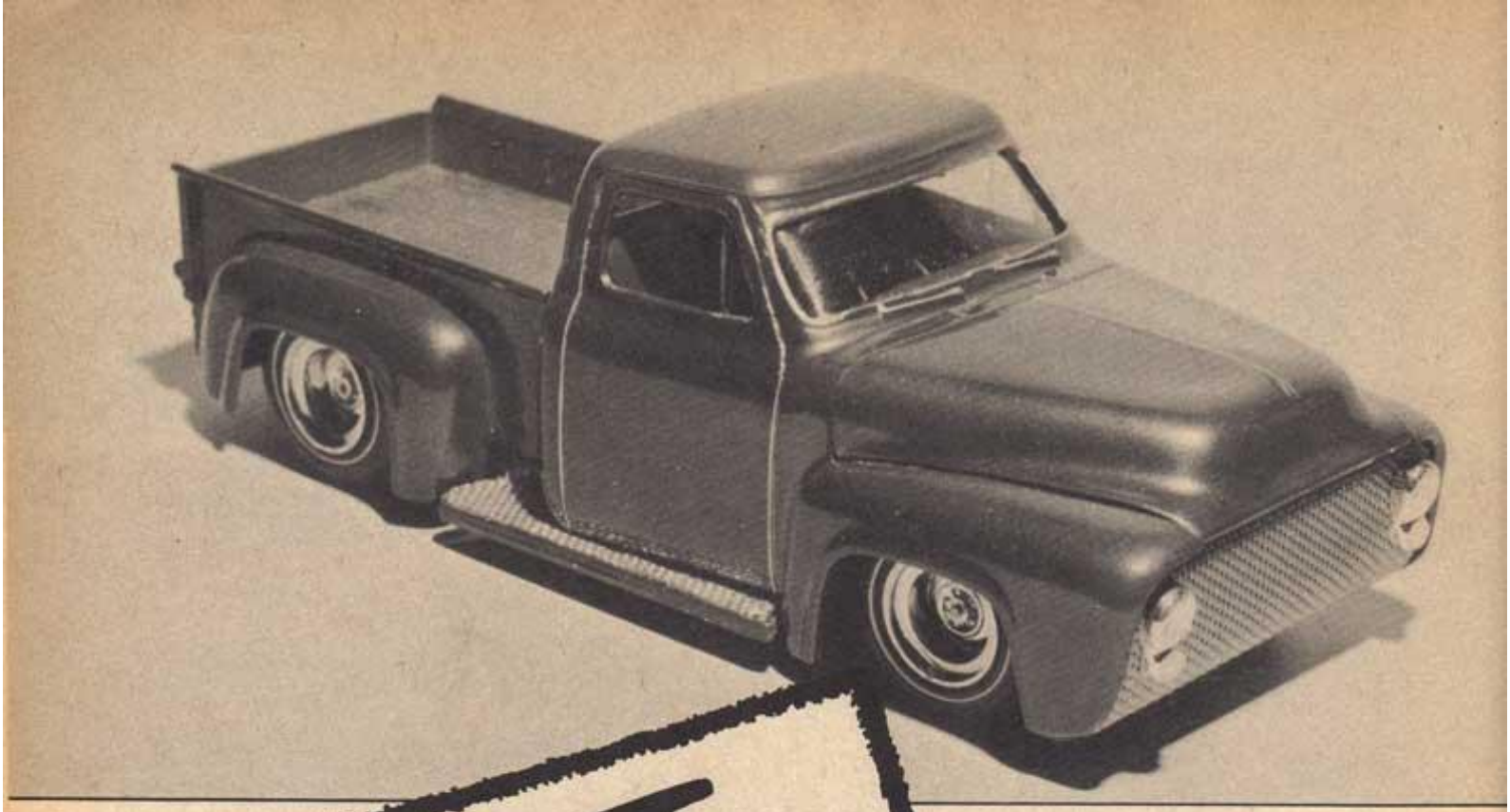
FOR MODELERS EVERYWHERE . . .

Each month the editors of MCS will select, from PHOTOS submitted, the top model car. It will be shown on these pages and its owner will receive a $25 U.S. SAVINGS BOND

SEND A PHOTO OF YOUR PRIZE MODEL TODAY TO:

MODEL CAR SCIENCE
Contest Editor
171 So. Barrington Pl.
Los Angeles 49, Calif.

You may submit as many entries as you wish. Send photos only, please. NO KITS. Include your name, address, age and information on how you built the model. Only CAR models are eligible. We cannot return any photos submitted.



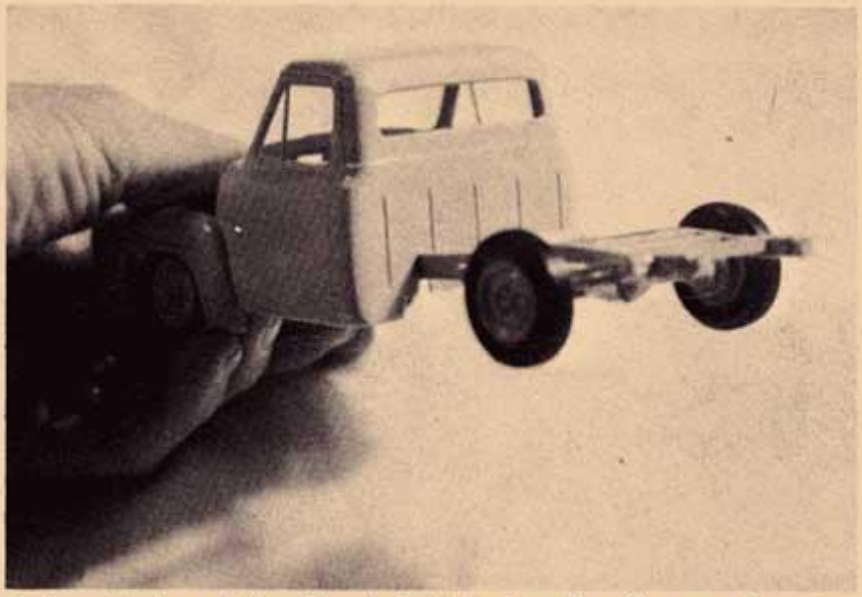
HOT HAULER

by Bob Paeth

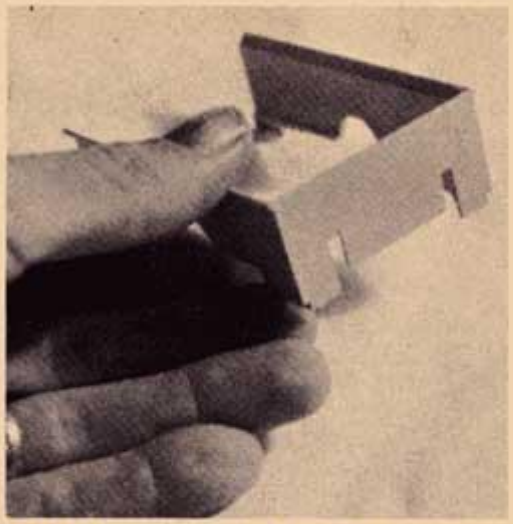
FOR a well rounded collection of customs all body styles and classes should be present. One type of vehicle quite often forgotten is the pickup truck. Actually, the pickup is one of the easiest to chop and it is also quite simple to channel the body.

A new building material is used in this pickup. The front grille and the rear grill are both made from fancy screen found in the crafts section of a hobby shop. The running boards are covered with this same screen. Since the screen was gold, the trim around the windows, the frame and the wheels were also done in gold. The all chrome engine from AMT's '57 T-Bird kit was trimmed in gold. The pickup bed wood comes from a fancy cigar wrapper. (The kind that comes in a metal tube). The taillights, tires, and wheels are from Revell Custom Car Parts. The headlights are from AMT's '57 'Bird. Instead of using the carburetor set-up on the 'Bird engine the "4-2" Cragar manifold from the Outlaw was used. The paint is Cal Custom Accessories "Kandy Apple" over a pearl underbase. The interior was done in black to contrast with the bright candy red paint job.

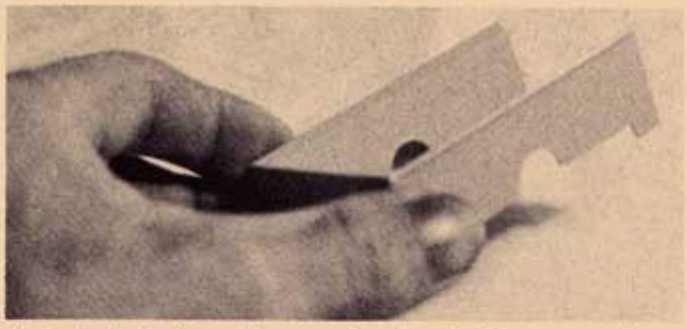
One last note, the frame, springs, everything connected with the chassis is stock from the kit. The frame should be painted before mounting the cab or pickup bed to it.



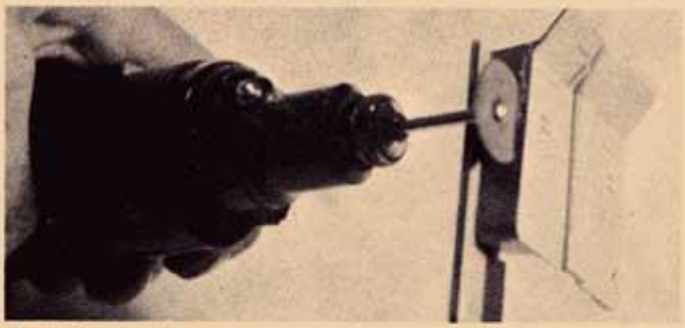
1. In sectioning a pickup, the cab should be done first. Slots must be cut in the back of the cab to clear the frame rails, the frame in front shortened.



2. The floor of the bed must first be cut out and then two slots cut in back. These slots should be the same depth as those in the back of the cab.

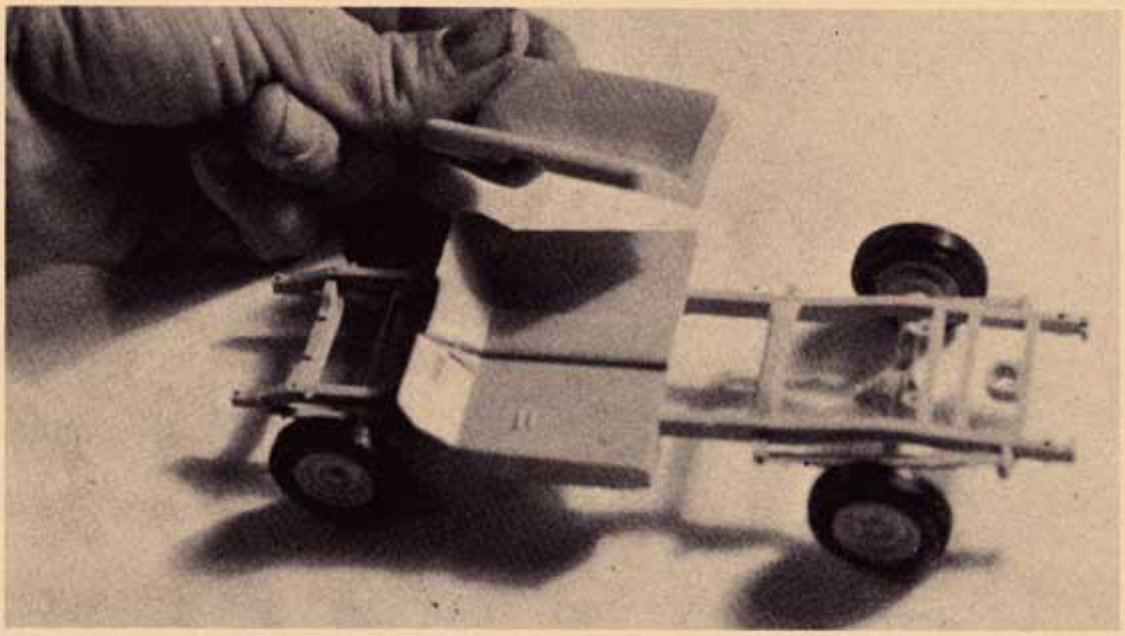


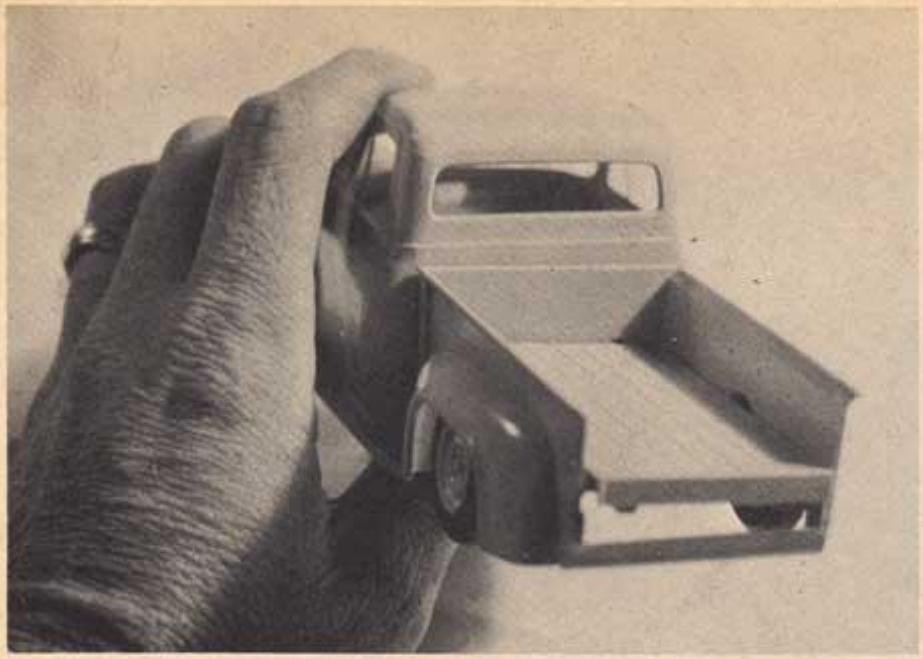
3. In order to have clearance for the wheels, two round notches must be cut into the sides of the bed. Make these cuts no bigger than necessary.



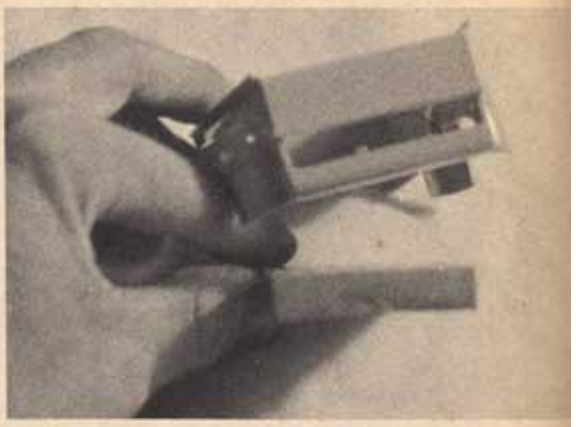
4. Although the running boards are going to be used, cut them from the floorboard, then cement the floorboard to the frame rails in the stock location.

5. Since the body now sets lower on the frame, the seat must be sectioned or it will hit the cab's roof. A cut off the bottom of the seat will do.

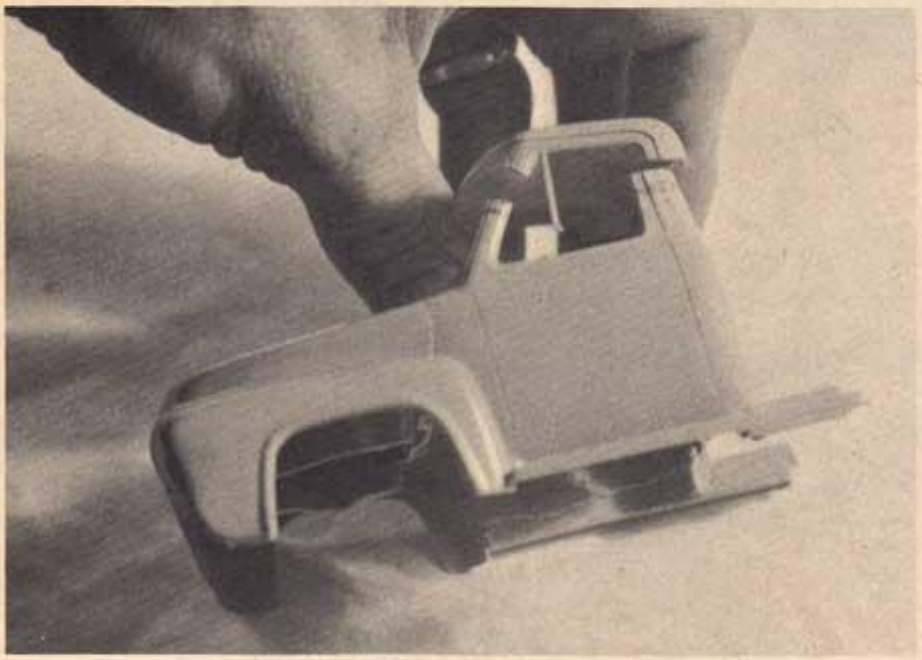




6. Without cement, try all the parts for correct fit. The gap below the floor of the bed will be filled later with a custom grille-taillight piece.

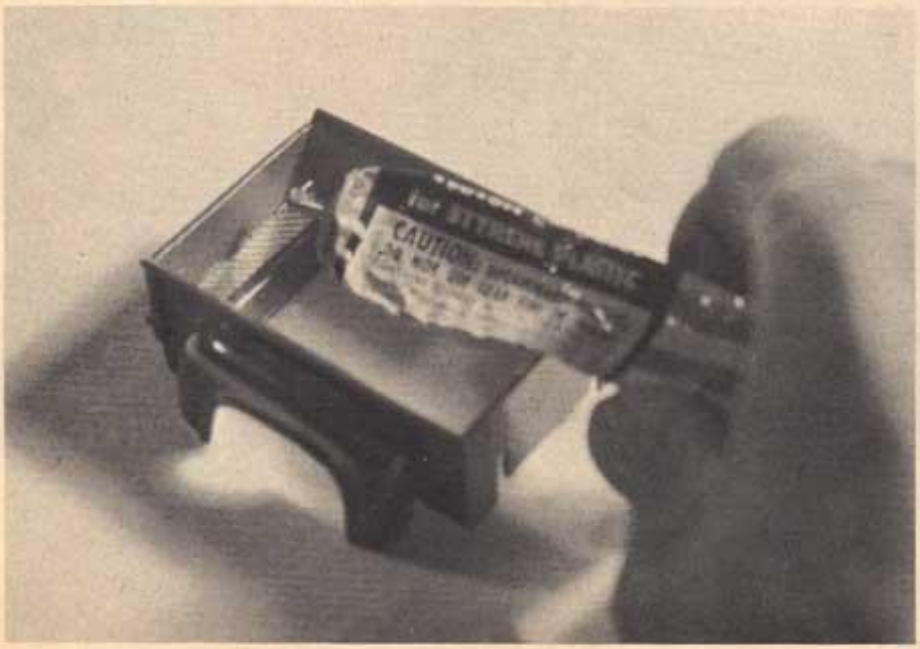


7. The wide edge on the floor should be made larger with scrap plastic to form a backing plate for the rear grille. Do not cement floor in now.

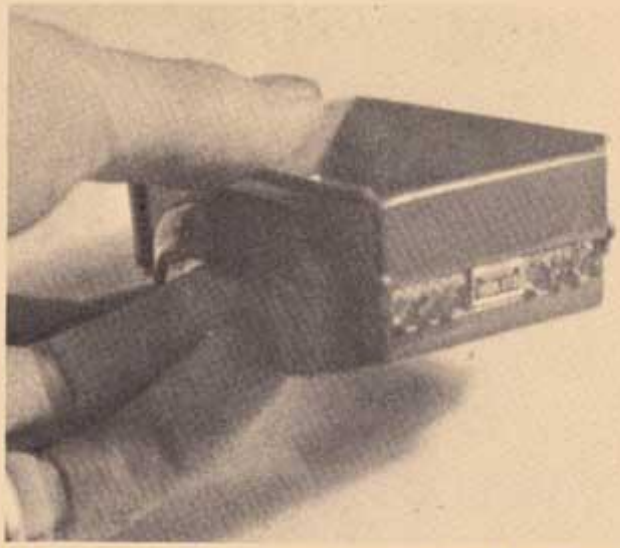


8. Make two marks about 3/16" apart and cut on the top line first. This will make the second cut easier because the body is better to hold.

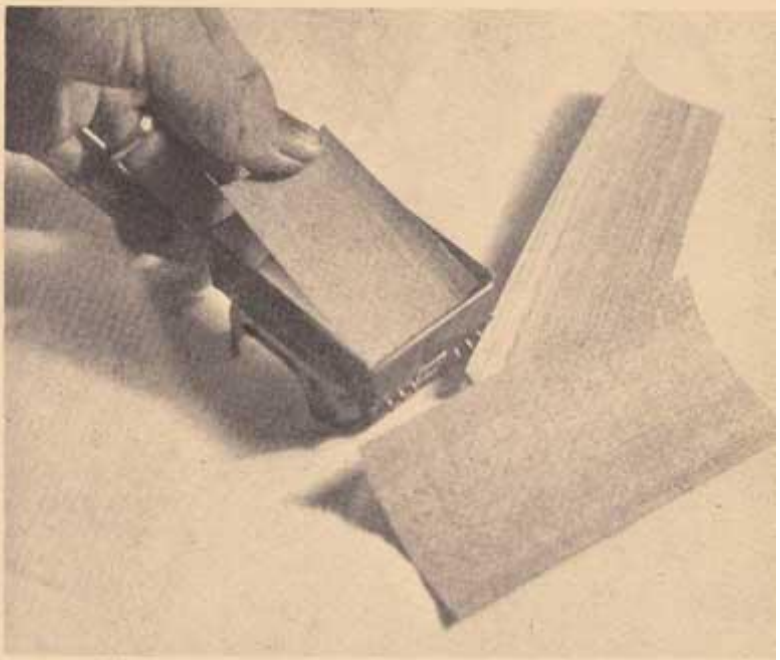
9. After the second cut, the posts will not line up properly. All that's necessary is to warm up the front posts and bend backward slightly.



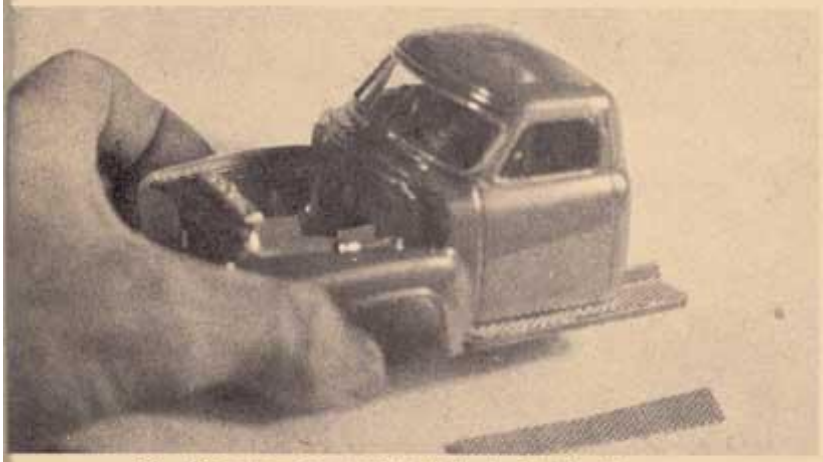
10. Paint your bed, then cut and cement the wire screen in place. Position the bed on the frame and cement the floor in place. Attach taillights.



11. The custom tailgate was sectioned and cemented. The taillights are the bullets in Revell's Custom Car Parts and the license plate is Revell's '41 Willys.

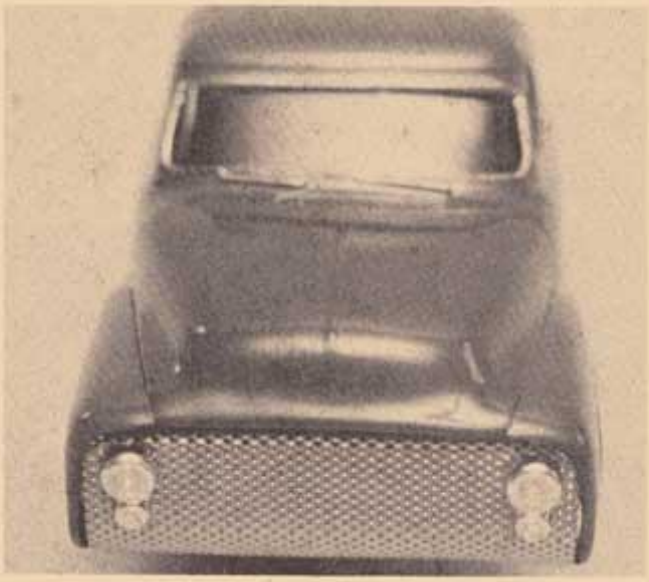


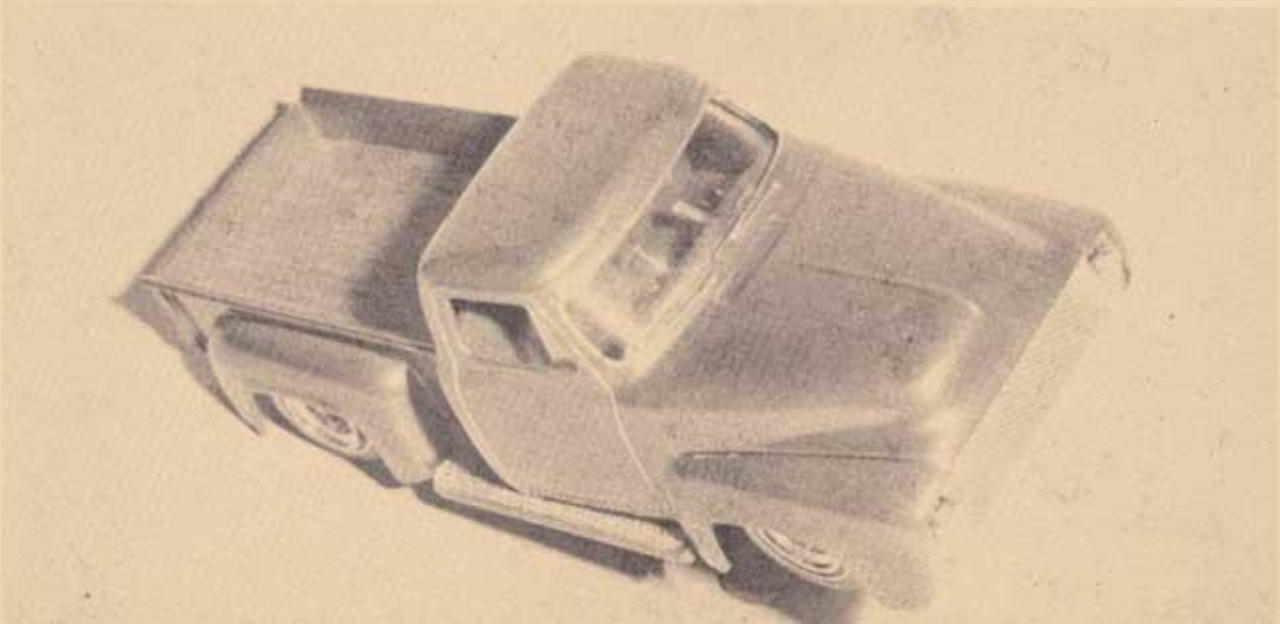
12. Customizing material does not have to come from other models. The wood here comes from the wrapper of a fancy cigar cut down to size.



13. After you have painted the body, trim the running boards with the same screen as in the grilles. Then trim around the windshield with gold paint.

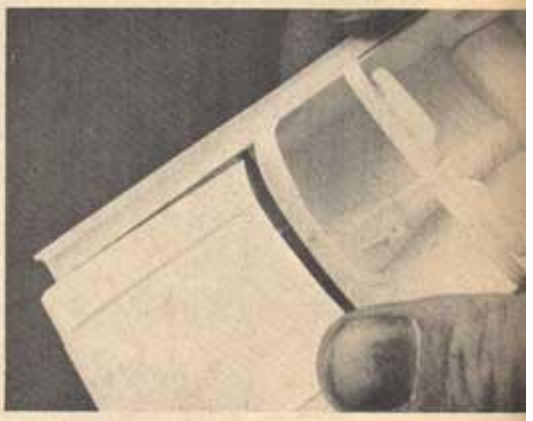
Additional trim and detail may be added if desired. Auto World's chrome tape would look good if placed in strips on the wood deck of the bed or try tinting the windows with Testors candy red. Nerf bars could also be used but should be very small.





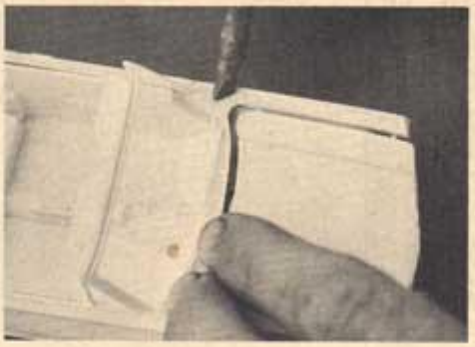
Styling Tips

"ROUNDED CORNERS"



#1. Observe the very sharp,un-custom look of the pointed corner of this Chevy's hood.

#2. With just a piece of sandpaper, round off the corner until the shape suits you.



#3. Hold the hood in place and with a piece of scrap plastic and your electric pencil, fill in the gap.

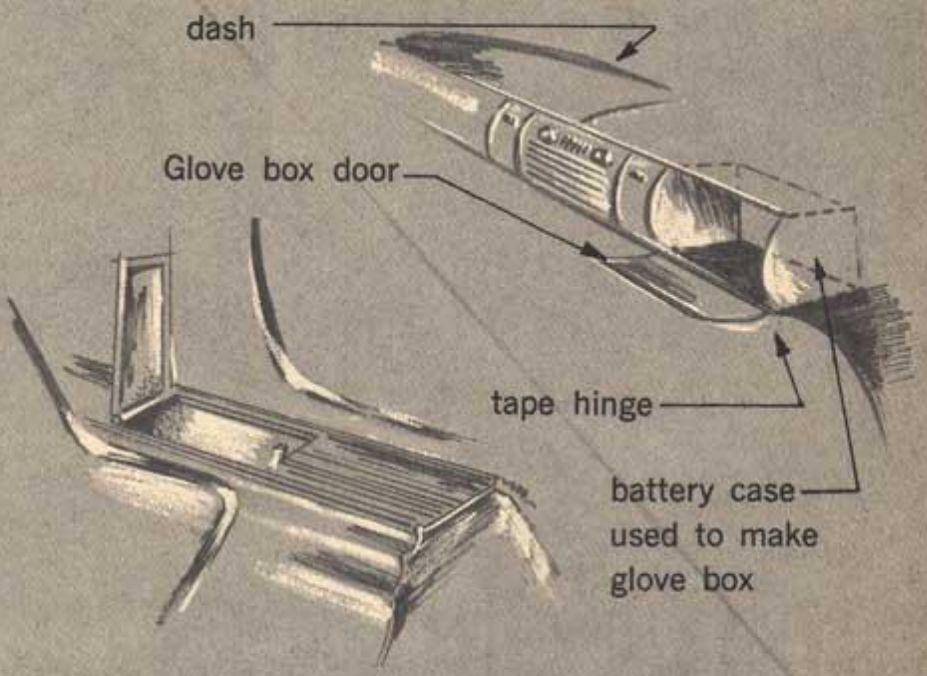
WORKING GLOVE COMPARTMENT

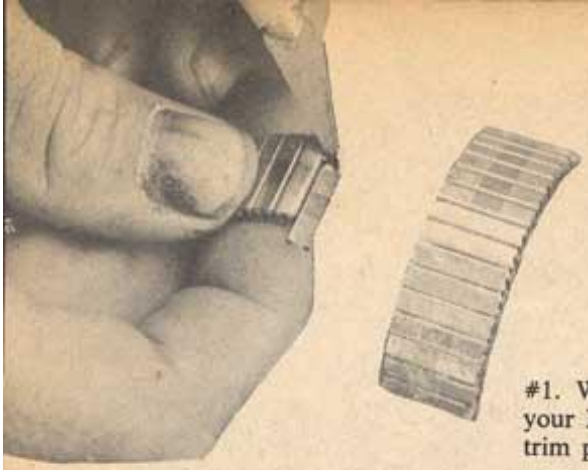
First take a stock dashboard and cut out the glove compartment door. This door may be used but if a chrome door is desired, it should be discarded. Take a license plate bracket and cut it to fit the glove compartment opening.

Next, take a battery case from one of the custom car kits (it comes as an accessory in many of the kits). Glue the open end to the glove compartment opening from behind the dash. This is your glove box. The box part may have to be sectioned, to make it either larger or smaller, depending on the size of the opening of the glove box. The door is now hinged using a small piece of masking tape folded double on the bottom edge and mounting door in place on front of glove box.

The glove box may be upholstered or painted depending on your taste. A final touch can be added by putting small items in the glove box or by mounting your accessory gauges in the back of the box.

One example of an open glove box: This one happens to be in a Ford or Chevy console.

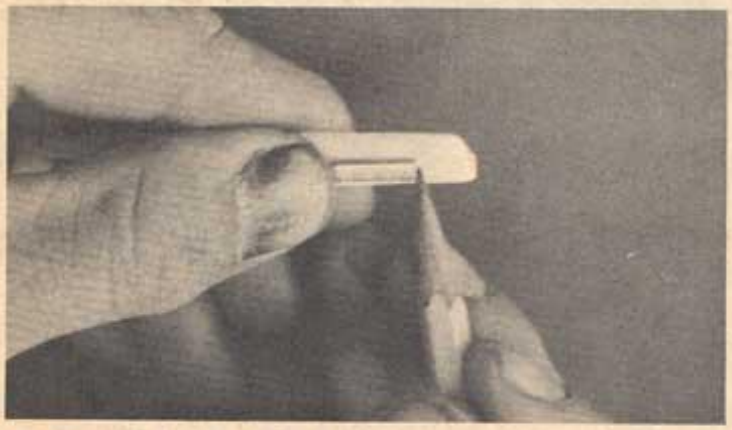




#1. With a sharp instrument such as your X-Acto knife, carefully slide the trim piece from the watchband.

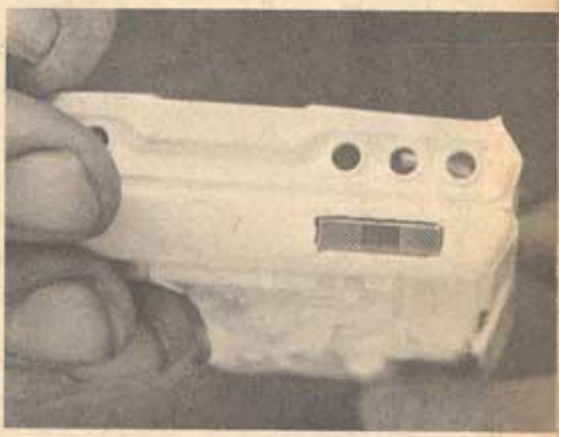
"BUMPERETTES"

Most contest judges look for clever and original ideas. To be able to use a part completely foreign to the model is always unusual and always a potential "point-getter." Discarded watchbands are fairly easy to come by. Friends, relatives or perhaps the local jewelry store can help. And one watchband gives an awful lot of bumperettes.



#2. Place the piece on the rolled pan and mark the outline with a pencil.

#3. After carefully trimming the hole out, force-fit the piece into place and the bumperette is installed.

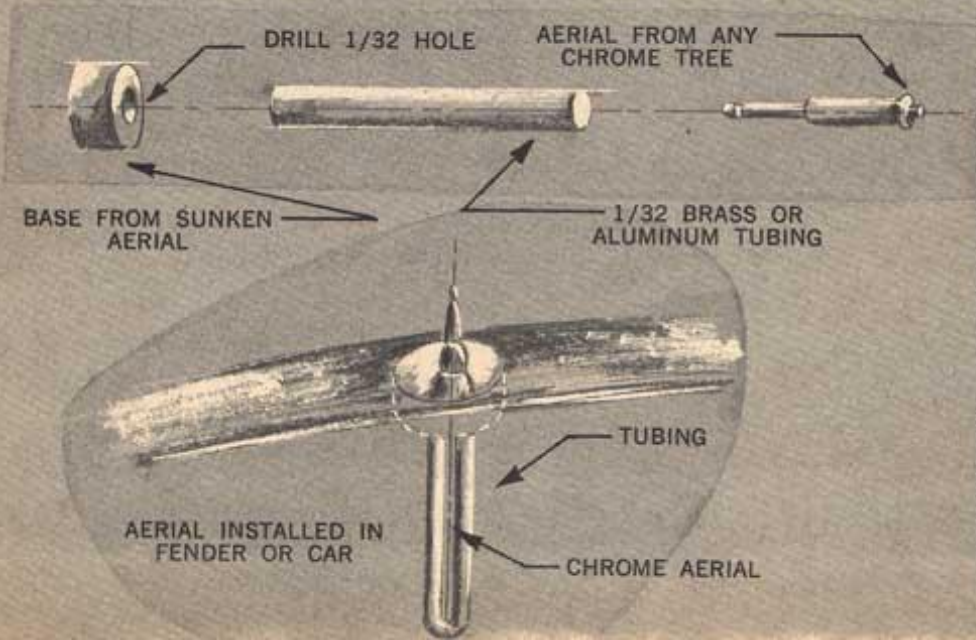


Operating Antenna for Your Custom

Authenticity in a model car is more fully realized when items can be made to operate in miniature as they would on the prototype.

To build an operating aeriel you will need an X-Acto knife, pin-vise or Moto Tool, drills, razor saw and files.

First, decide where to position your aerial. Once you have made this decision, it is time to begin work. From one of the many kits containing sunken aerials, cut the aerial portion off with an X-Acto knife. Find a drill that is the same diameter as the sunken aerial base. If an exact drill is not available use one that is fairly close. Drill a mounting hole in spot chosen for aerial. Finish mounting hole with a round file. Test fit base every so often to insure a good tight fit. After a tight fit has been achieved, remove antenna base from hole.



Choose an aerial from the many available on chrome trees. Next, obtain a length of 1/32 brass or aluminum tubing from your hobby shop. Drill a 1/32 hole in chrome base which we fitted into fender earlier, fit tubing into drilled hole. Lay chosen antenna alongside base and tubing, measure so that tip of aerial will be just above top of base in depressed position. Mark brass or aluminum tubing and cut with a razor saw.

Tubing and base assembly are installed in fender or area decided upon for aerial after car has been painted. A small dab of Vasoline is applied to the bottom end of antenna, to permit it to slide easier, it is then inserted into bottom of tube and pushed up into position.

You now have a working antenna!

The M.C.S. MONSTER Primer

EDITOR'S NOTE: *In a radical departure from our usual policy of presenting only interesting, informative, topical and instructive articles,* Model Car Science *boldly presents this nauseating, dull, gruesome and totally worthless collection of* yeccccchh *compiled by a well-known author who prefers to remain nameless. When we asked him if it bothered him that his writing style so closely resembled that of another popular magazine, he simply replied, "What,* Me *Worry?"*

So here it is — MCS's answer to the Mad, Mad, Mad, Mad fad of Monster building.

This is a monster. His name is *Mother's Worry.*

No wonder. *Your* mother would be worried if you looked like him.

Mother's Worry is made by Revell.

Some people say Revell is sick, sick, sick.

They are wrong.

Mother's Worry is making Revell rich, rich, rich, rich.

Don't you wish *you* were sick enough to get that rich?

This is another "Weird-oh" by Hawk. His name is *Daddy.*

Color him square.

Daddy is not even hip enough to be a surfer.

Hodad. Hodad. Hodad.

Dou you dig *Daddy's* car?

If you lead a good, clean life and listen to your parents, someday you'll have a car just like it. Promise.

It's easy and fun to customize *Daddy.*

Just cut out a picture of *your* daddy and paste it on the face.

Revenge. Revenge. Revenge.

But don't let him see it until *after* you get your allowance.

This is another monster. He is a "Weird-oh" by Hawk and his name is *Digger.*

His mother is not worried about him at all.

He just ran over her with his dragster.

Crunch. Crunch. Crunch.

Would you like to do a crazy customizing job on *your Digger?*

You can — with Revell Custom Car Parts.

Hawk will not mind at all.

This is called peaceful co-existence.

This is *Mr. Gasser.* He is not wearing a shirt.

Do you know *why Mr. Gasser* isn't wearing a shirt?

Because he has a steering wheel molded to his left hand.

Could *you* button your shirt if you had a steering wheel molded to your left hand?

Mr. Gasser is fun to paint. While his arms, hands and back are still wet, you can cover him with hair.

Prickly. Prickly. Prickly.

Cut the hair off of your little sister's doll's head.

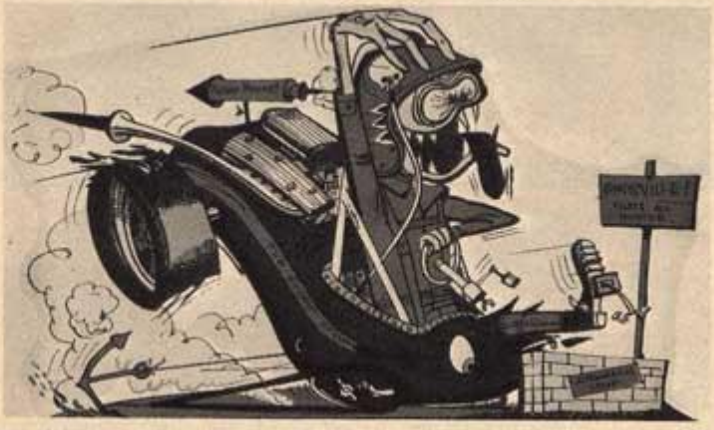
If she cries, tell her that *Mr. Gasser* will get her.

That will shut her up!

This is a *Rat Fink*. He wants to be your friend.
Does that surprise you?
It shouldn't. You probably have a lot of friends who are rat finks.
The only difference is that your friends don't have tails.
Fink. Fink. Fink.
Human rat finks borrow your car, copy your homework and talk about you behind your back.
Rat. Rat. Rat.
Have *you* ever been a rat fink?
Of course not. Only *other* people are rat finks.
This is called self-deception.

This is Revell's *Drag Nut* – a very useful monster.
He can help you stay out of school.
See the warts on his face.
Drill a small hole in each one; then, glue a curly hair into each hole.
When your parents see that, they will take you to a psychiatrist.
Psychiatrists are much easier to put on than teachers.

This is not a monster. This is a mother.
This mother has just made a serious mistake.
She walked into her son's room and saw his monster collection.
Shriek. Shriek. Shriek.
When she gets her voice back, she will call her son's father at the office.
But then he will not be *her* son anymore.
He will be his *father's* son.
She will ask him what the younger generation is coming to.
He will say they didn't have monsters like that when *he* was a kid.



These are 3 more Hawk monsters – *Huey's Hut Rod, Drag Hag* and *Endsville Eddie*.
Hawk is very anxious for you to buy them right away.
Would you like to know why?
Because just as soon as you buy them, Hawk will come out with *more* monsters for you to buy . . . and more and more and more.
Hawk turns out monsters the way General Motors turn out cars.
They know a good thing when they see it.
Do you feel like you're being exploited?
Don't. Feel patriotic.
Buying monsters strengthens the national economy.

These are the kinds of monsters your mommies and daddies didn't have when they were kids.
Their names are *Frankenstein, Wolf man* and *Dracula*.
Don't they look clean-cut and wholesome? – just like 4-H club members.
These friendly cats didn't grow warts or race around in hot rods.
No, they spent their time usefully and profitably.
Scaring people to death . . . tearing them apart . . . and drinking their blood.
Yum. Yum. Yum.
Someday *you* will be a parent.
Then you can tell your kids about the monsters you didn't have when you were their age.
Fink. Fink. Fink.
Oh well, maybe by then they'll bring back the very first – and most horrible – monsters of all:
Shirley Temple dolls.

Wild Willys

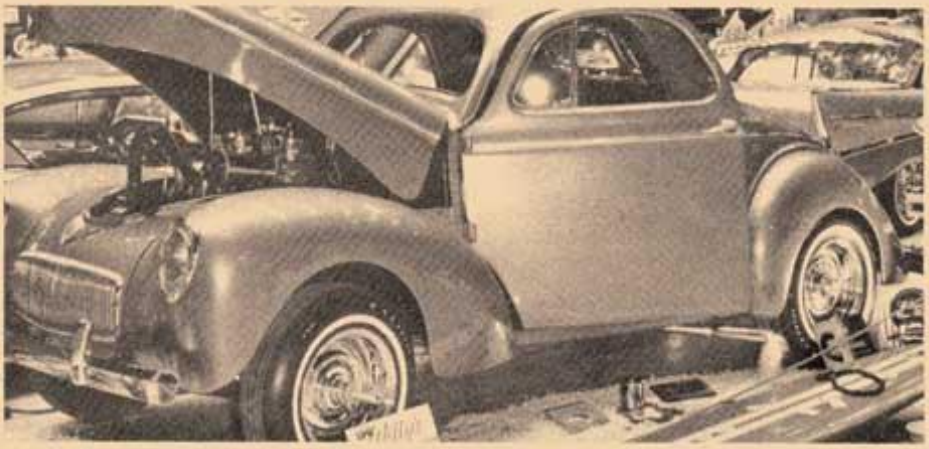
By Bob Wagner

TRY THIS CUSTOM SHOW-GO MODEL

Both Revell and AMT have recently released Willys coupes, which if built straight from the kit make great gassers. Either of these kits can be used to build a custom street coupe. Car used here was the Revell Willys.

Headlights are first molded into fender contour. By building up this area with layers of putty, a smooth flowing contour can be obtained. This operation takes time and patience, as several applications of putty are required. After each application, putty must be allowed to dry thoroughly before beginning to work area. After putty has completely dried it is sanded and shaped to flow into fender contour. When finished, sanding and shaping are checked for flaws by eye.

Hood is made to open in a pancake manner. This is accomplished by cutting hood apart just above chrome line, a razor saw is best for this type of job. Care should be emphasized in this operation, as the neater the cutting job, the less filing and sanding to be done later for a good fitting hood. Lower portion of hood is glued into its normal position on body, making sure that rear edges of hood fit flush with door jams. It is best to hold hood in position until dry, as there is a tendency to spring out and it will not line up with upper portion of hood or doors. When glue has completely dried, putty is used to mold it to fenders. Again, several applications of putty and sandings will be necessary before desired effect is achieved.

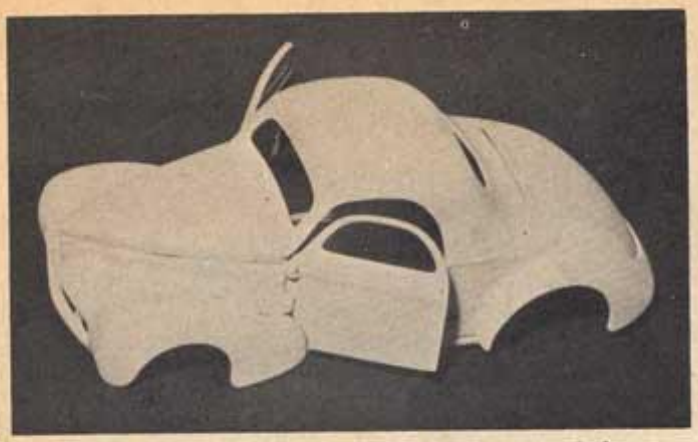


Willys coupe built for street and show.

Holes for bumper brackets in front and rear are filled at this time. It is helpful to use a piece of masking tape behind each hole to hold putty in place while it is drying. After putty has completely dried and area is sanded smooth, pieces of tape are removed. Rear window center post is removed, providing a one piece rear window.

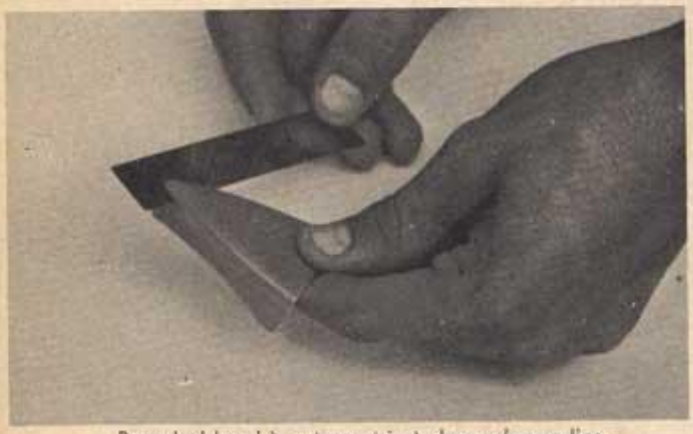
Since car will be for street use, it will need headlights. Grille and headlights for this model were made using AMT's Ala Kart headlight assembly, and one grille bar from a Willys kit. Headlights are glued into place on either side of grille cavity.

Working headlights can be easily made by following the article on page 23 in the Oct. 1963 issue of MCS. For taillights, the ones in the Willys kit will do nicely, or you may wish to use a custom set. AMT's new '64 Ford Galaxie convertible and '64 Chevy will contain working headlights and taillights in the kit, these may be used if the builder desires.

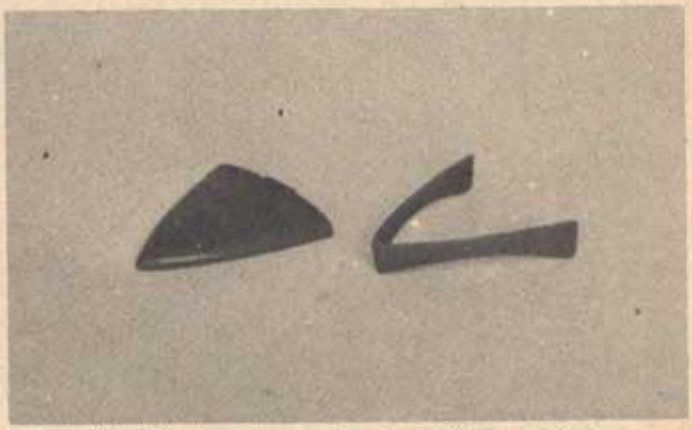


Here is our Willys coupe ready for final sanding, just before paint application.

Original headlight area is molded in with either plastic or putty, or a combination of both.



Pancaked hood is cut apart just above chrome line.



Hood is shown here as it appears after separation.

Lower portion of hood is glued on body and set aside to dry.

Upper hood is slipped into its hinge slot, and alignment is checked.

Bumper support bracket holes front and rear are filled with putty.

Rear window post is removed for a sleek, one-piece look.

Heavy consideration is given to models that show the most originality of design, practicality and artistic merit of design.

CONTESTS ARE FOR WINNERS

Fisher Contest Judge tells how you can win

THE TWO MEN carefully move from table number 56 toward table number 57. At first glance, they look like 20th century Gullivers moving through a parking lot in the modern land of the Lilliputians.

They are in the center of a large auditorium hall surrounded by over a thousand miniature automobiles of every conceivable shape, style, and color. They comprise one of the three judging teams whose task it is to evaluate the end product of another year of Fisher Body Craftman's Guild model car building activity.

The Craftsman's Guild competition came to an official end at mid-night, June 5, 1964. Over a thousand young men, ages 11-20, have designed and built these original model cars in competition for the $117,000 in scholarships and cash awards offered annually by the Craftsman's Guild.

The painstaking job of perfecting these miniature masterpieces, from basic materials like wood or plastic, is over for the participants. Now . . . they wait and wonder, "Will the X-ray eyes of the professional judges see my entry as the best from my region?"

But, back in Detroit, the work is just beginning for the judges and Guild officials who must find the cream of the impressive crop. It is no easy task, for there are many fresh and practical ideas. There are many examples of fine craftsmanship.

The three pairs of official Craftsman's Guild judges, whose job is to determine the winners, are experts in two areas. Each team is made up of one professional stylist from the General Motors styling staff, and one experienced industrial arts instructor from the Detroit area schools. Each model car entry is judged three times – once by each team – and then the results are totaled and that sum becomes the final score for that model.

It is the stylist's responsibility to judge the model entry for 1) originality of design 2)practicality and 3) artistic merit of design. His expert eyes appraise the simplicity of the overall design. He considers proportion a major factor and checks to see if the model offers a harmonious relationship of all shapes and components. He looks for form – that quality that is born when all shapes are well outlined. He feels that a good design will have unity and that the finished entry produces a single harmonious effect. Finally, the professional stylist examines the model for rhythm, or the repetition of similar designs or shapes in diminishing or increasing size. He feels a model car without rhythm is static and lifeless.

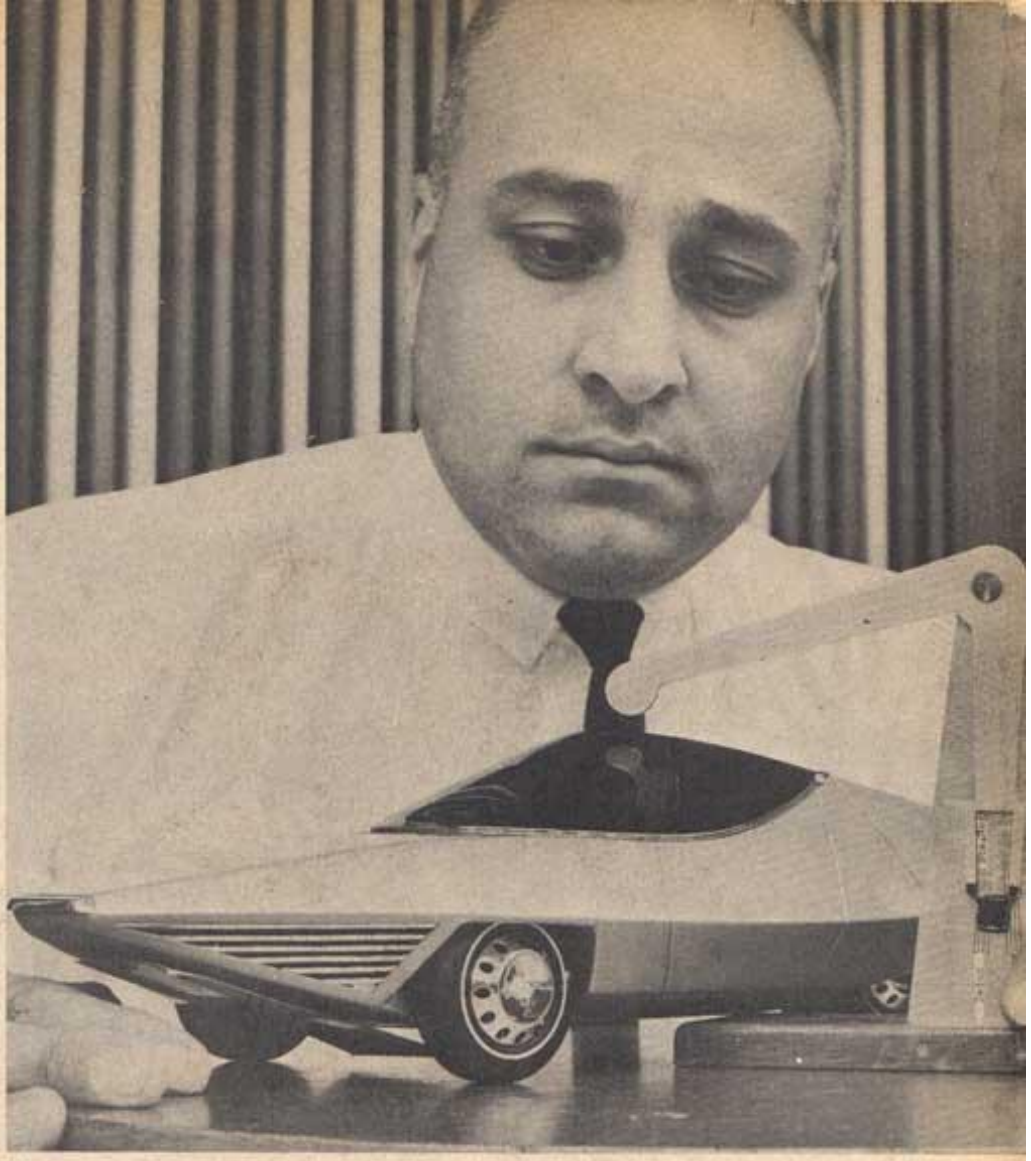
The second member of the judging team is primarily concerned with the physical workmanship reflected in each model entry. He is an experienced craftsman who is familiar with the difficulties

encountered by the young model builder, and is quick to note the problem areas in each different model, and evaluate the skill employed by the builder in solving these problems.

To get a clearer idea of what the professional Craftsman's Guild judges are looking for, we interviewed Vincent O. Napoleone, a three year veteran of Guild judging.

Napoleone completed his education in 1959 when he was awarded the Master of Arts Degree from Wayne State University in Detroit. He has been teaching industrial arts in the Detroit area schools for nine years.

As craftsmanship experts for the Craftsman's Guild, Napoleone and the other two industrial arts judges are primarily concerned with scoring a model entry on the basis of 1) scale fidelity 2) workmanship and 3) painting and finishing. When asked if he ignored the styling features of the models he judges, Napoleone said, "Although our share of the judging is concerned mainly with the craftsmanship, it is not humanly possible to be unimpressed with a superior design. That is, when two models show equally good craftsmanship qualities, the eye is naturally drawn to the one with a continuity of design."



Vincent Napoleon evaluates models on the basis of scale fidelity, workmanship, painting and finish.

Because of this, the Fisher Body Craftsman's Guild has established the ten $1,000 styling scholarships which are awarded to entries having superior designs, regardless of their craftsmanship.

He continued, "The true craftsman will use a great deal of effort in his workmanship to accent a fine design. The two qualities (design and craftsmanship) are hardly separable – that is, they act to compliment each other."

Napoleone did say however, that occasionally a model entry will boast superior craftsmanship, even though its design may not be too new or striking. The Guild judge said he allots maximum craftsmanship points to such models, regardless of their design. He commented, "A fine finish, and tasteful metallic appointments are as eye-catching as an outstanding design."

Napoleone calls continuity the most important quality of a fine model car entry. He said, "A good craftsman would not put a rough, half-finished bumper on a magnificent model body. The models that have continuity are as prominent as a fine crystal goblet on a shelf of drug store glasses."

Napoleone feels that entries in the Fisher Body Craftsman's Guild competition are becoming more and more expert. He attributes this to the competitive spirit that is developing among the participants.

He would advise model car builders to think about their designs very carefully before actually beginning their models. He feels that organizing your ideas, tools, and materials is a vital step in successful model development. Napoleone stated, "A successful model car entry is born of a certain amount of talent, a great deal of determination, and the use of common sense."

Teams of judges evaluate each entry three time before a winner is selected.

Cadillac Coupe d'Elegance

SECTIONING IS THE SECRET

by Bob Wagner

BODY SECTIONING is a major body alteration used by customizers to lower the overall silhouette of a car. The car to be sectioned here is JoHan's 1964 Cadillac. Cadillac already has the appearance of being long, sectioning will give it the appearance of being even longer and lower.

Mark each side of Cadillac using an H or 2H drawing pencil (available wherever mechanical drawing supplies are handled). First line is directly underneath side chrome trim strip, it extends from rear of car to front wheel opening. Using a ruler, carefully measure down 1/8 inch from first line. Make marks in the rear and at the front. With your drawing pencil, connect these marks by using a file card used as a straight edge. Mark opposite side in same manner. After you have finished marking the lines for sectioning, use a ruler to recheck that lines are exactly 1/8" apart. A mistake in measuring could cause havoc in future steps.

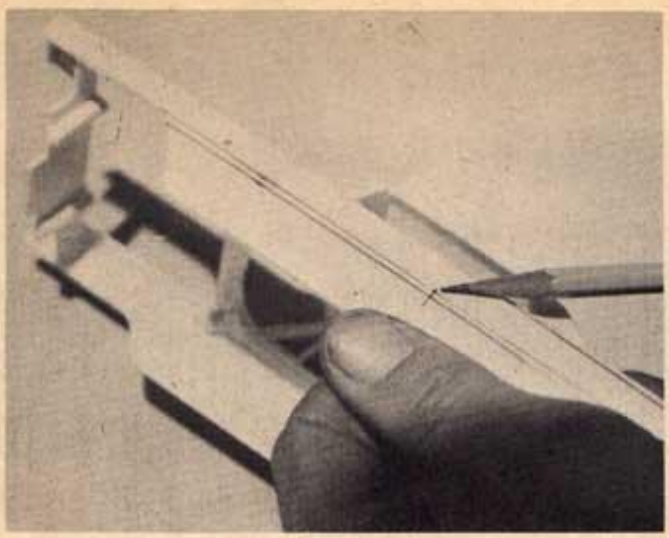
When you have decided that marked area is correct, it is time to begin cutting. Using a razor saw, cut carefully along line directly under chrome trim. Remove lower portion of body, repeat operation on opposite side. Both sides have now been removed from car. Again with a razor saw cut along second mark on both pieces, discard one eighth piece. This is a scale three inch section. In the above steps remember to saw carefully as the more precise the cuts, the easier it will be to mate the pieces back together. Both lower portions are glued back onto body, use door lines to line up the pieces. Set car aside and give it a good chance to dry before continuing on to next step. As sectioned portion is going to be a weak point it might be advisable to glue a small piece of scrap plastic behind sectioned portion of body panel on both sides of car to strengthen this area.

1. Johan '64 Cadillac kit is used for construction of this car.

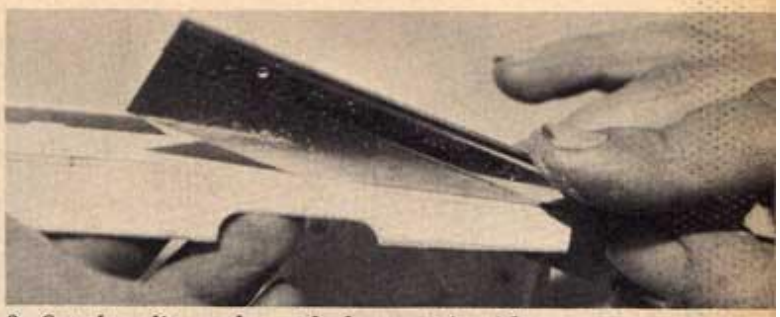
After body has dried and become rigid, body putty is used to fill in crack left from sectioning.

While body putty is drying we can work on the next step: removal of the rear fins. Again using an H or 2H pencil, mark a line where fins join the body. With your razor saw carefully remove fins. There will be a thin slit left where fin joined the body, this is filled by inserting the cut off fin from underneath and gluing in place. Allow filler piece to dry thoroughly, then use a course file and cut away excess of fin which protrudes through the slit. Before this section can be puttied, taillights will have to be sectioned and set in place.

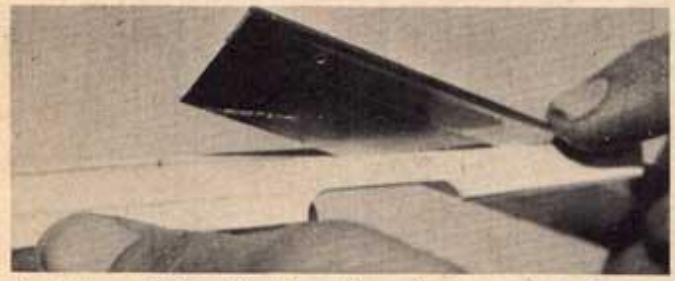
Cut chrome taillight housings from grille assembly and set the assembly aside. To section taillight housings, make first cut at middle bend in housing. After housing is cut apart take one of



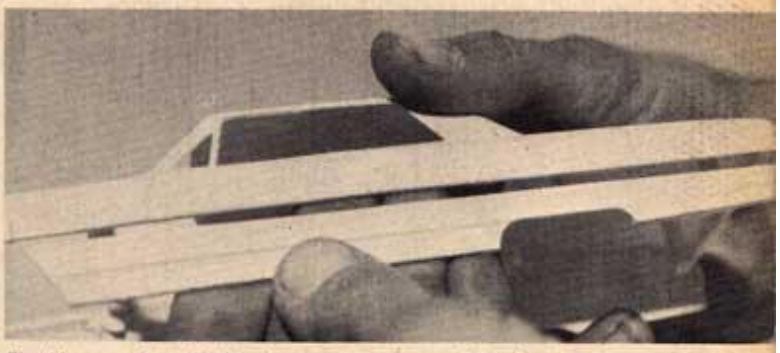
2. *Lines are drawn with a 2H pencil 1/8" apart along side of body for sectioning.*



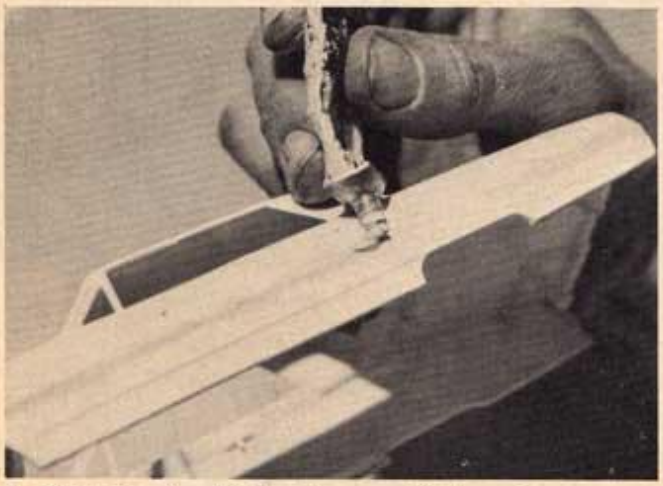
3. *Cut along line underneath chrome strip with razor saw.*



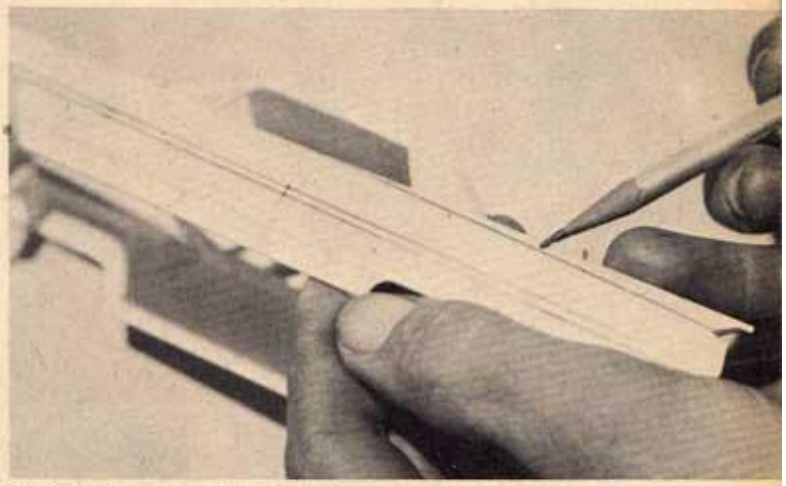
4. *Remove 1/8" section by cutting along second mark.*



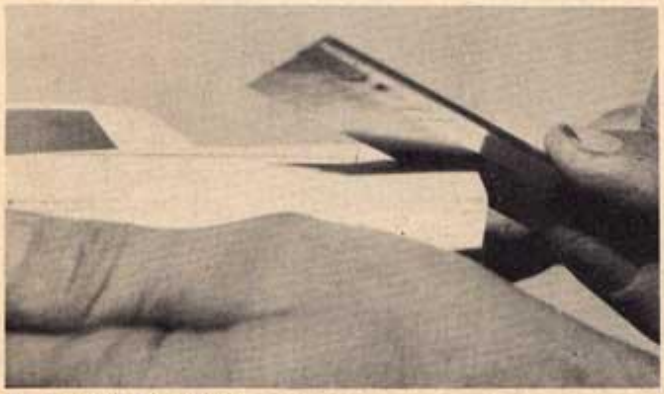
5. *After section, body pieces are cemented back together.*



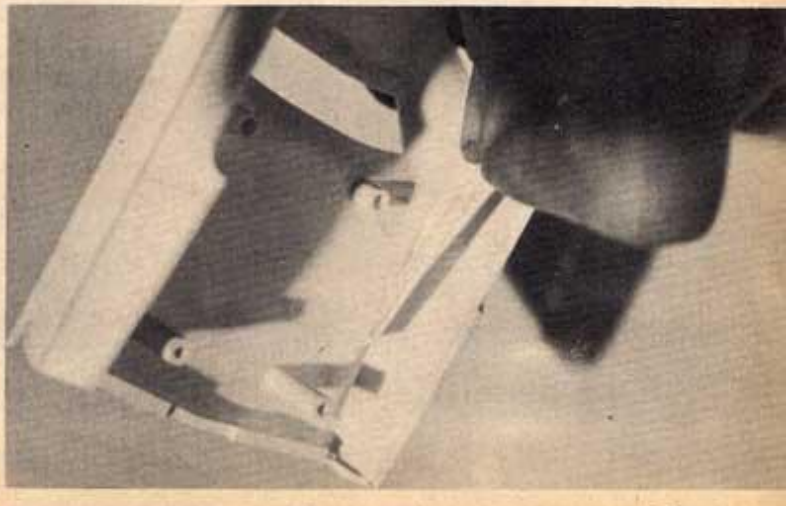
6. *When glue has dried, putty seam left by section.*



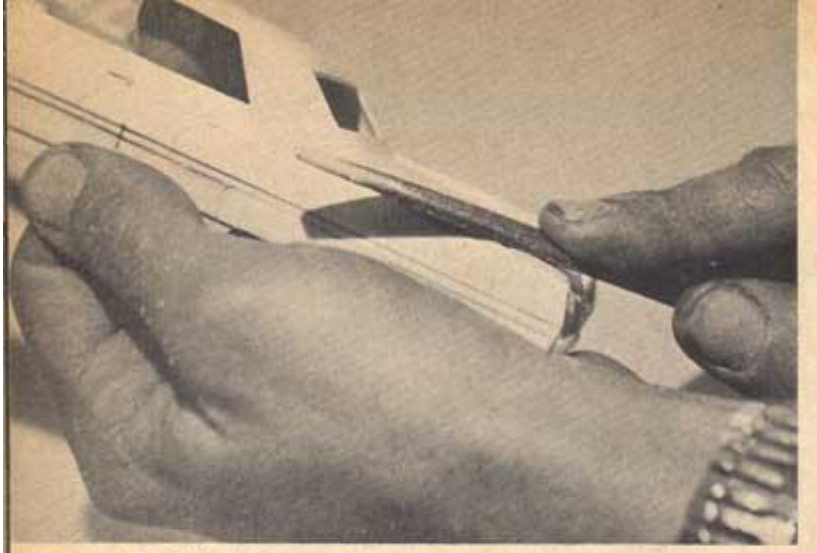
7. *Mark fin where it joins body.*



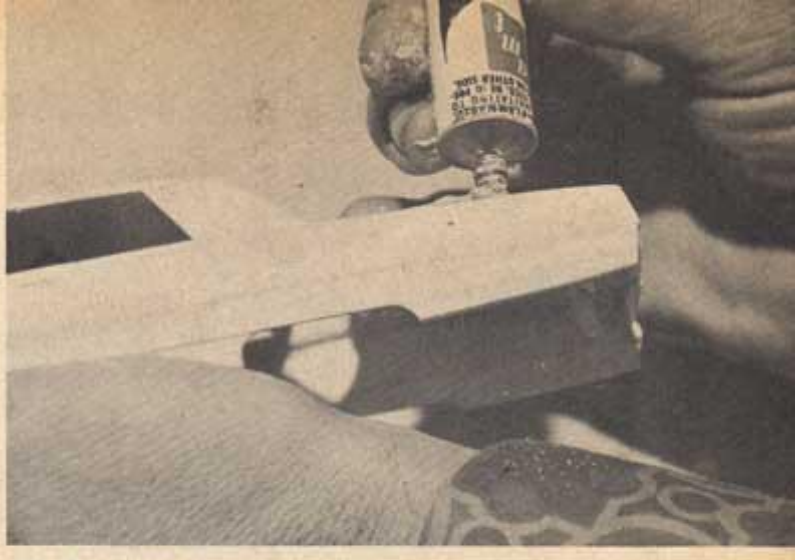
8. *Saw fin from body.*



9. *Insert fin from underneath to fill slit where fin was cut away.*



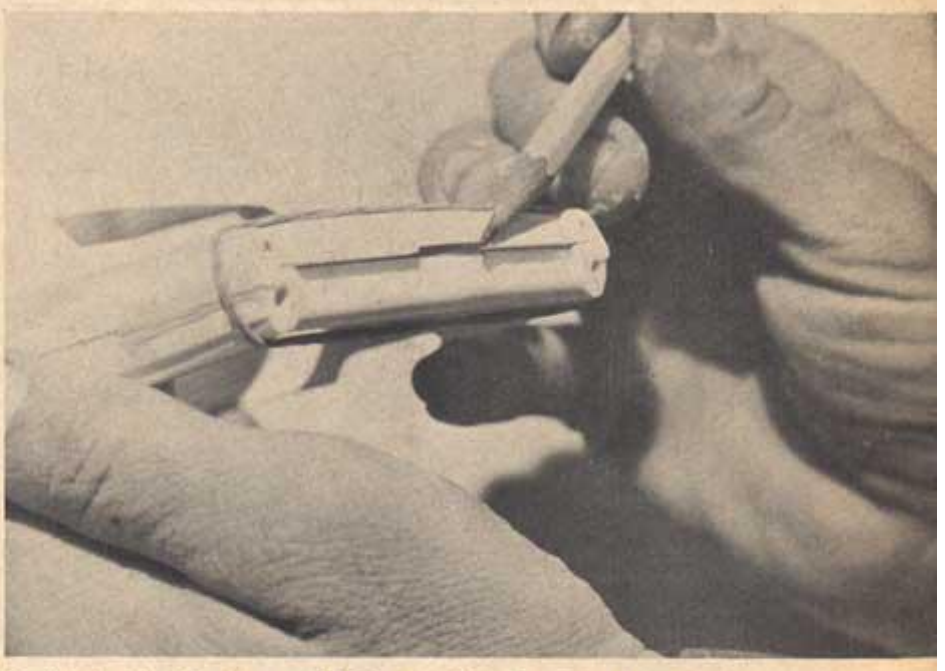
10. File off exposed portion of fin.



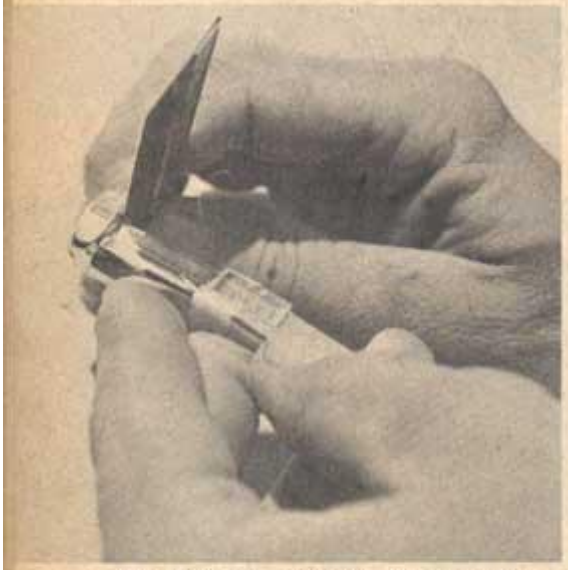
11. Putty area where fins were removed.

12. Measure 3/16" from top of custom pan, mark with pencil.

13. Cut along marked line with saw.

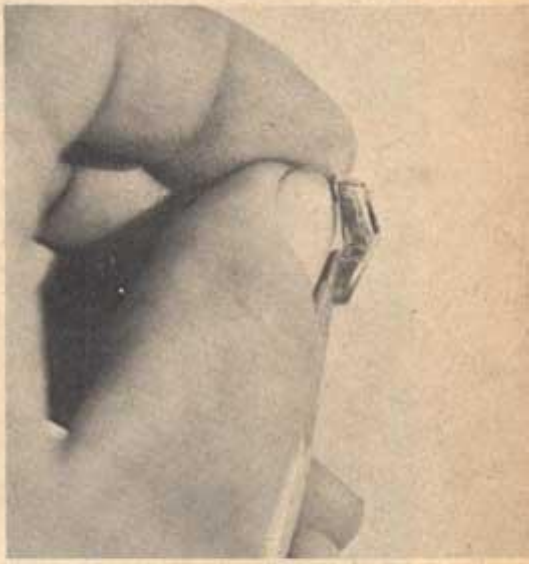


14. Pan is glued in place and held securely with rubber bands.



15. Taillight housings are carefully cut from rear grille assembly.

16. Taillight housings are cut apart at bend and 1/16" section is removed.



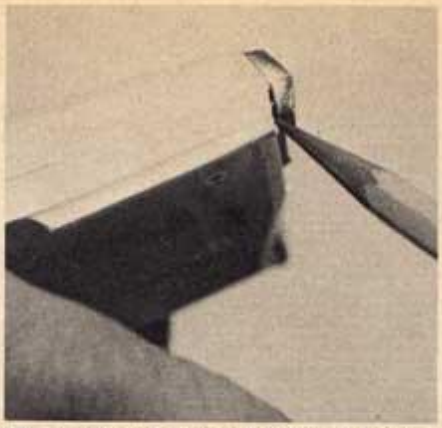
17. Housings are then glued back together.

the pieces and measuring carefully cut 1/16", reglue housing back together. Perform operation on both housings and set aside to dry. Trim red lenses to fit, after housings have dried completely. Set chrome housings in place, putty area where fins were removed from body. Work putty until a smooth contour is achieved between taillights and fender. Putty area between lower edge taillight and fender. When putty has set up, remove chrome housing from fender. Mark custom rolled pan 3/16" from top and cut with a razor saw. Pan is then glued in place between fenders, rubber bands are used to hold it in place while glue dries.

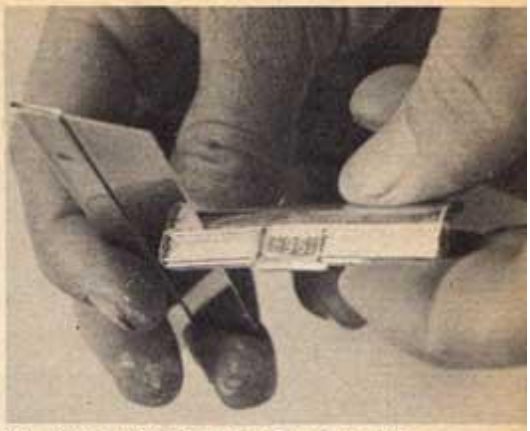
The rear grille panel which had the taillight housings removed earlier and was laid aside is modified now. Rear bumper is cut off just under the lower grille bar. Grille is installed in place in rear pan.

Next is the modification of the front wheel wells. Wheel wells need to be opened up because of the lowering of the body through sectioning. A tire is laid on the fender in such a way that a line drawn around the tire flows into existing wheel well. Draw wheel wells on both front fenders. With a razor saw, cut vertical slits approximately 1/16" apart, these slits are cut just to the marked outline. Chip out new wheel well shape with an X-Acto knife, after initial pass, a second pass should be made to clean up any rough areas. Filing and sanding will bring well to desired and finished shape.

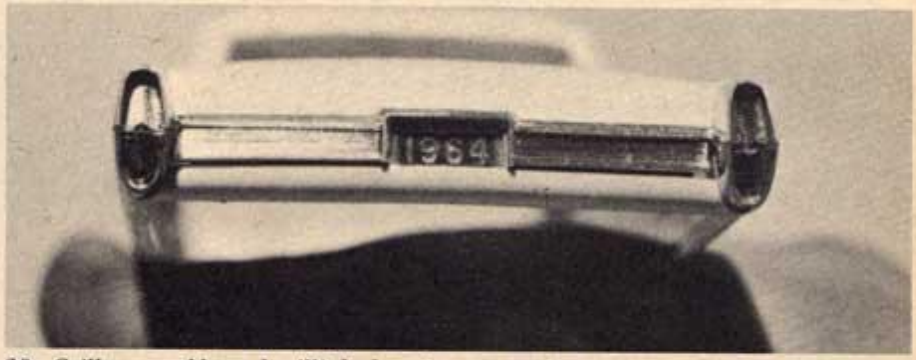
Front grille is modified in the following manner. Bumper is cut away with a



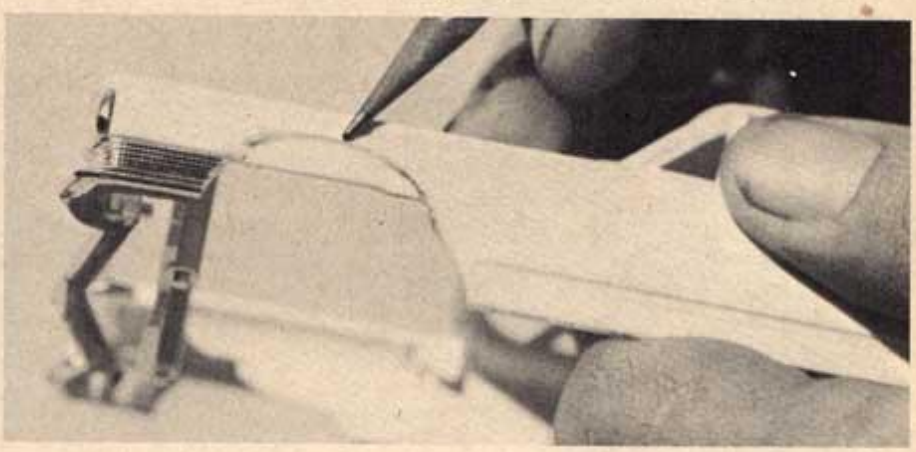
18. Small area between taillight housing and body is puttied in.



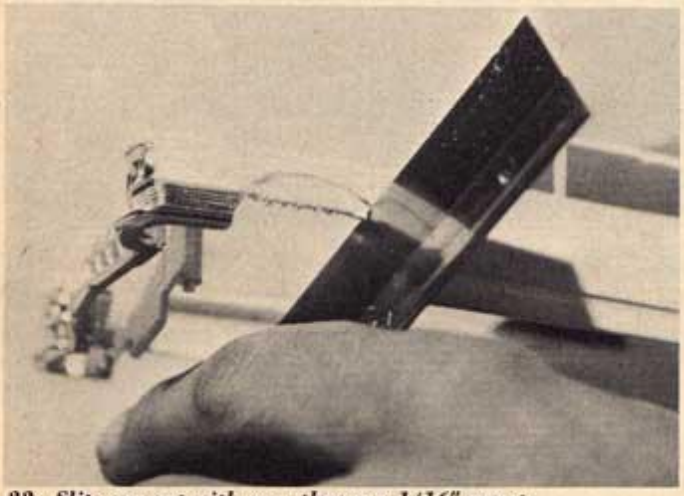
19. Rear grille has bumper removed by cutting just underneath bottom grille bar.



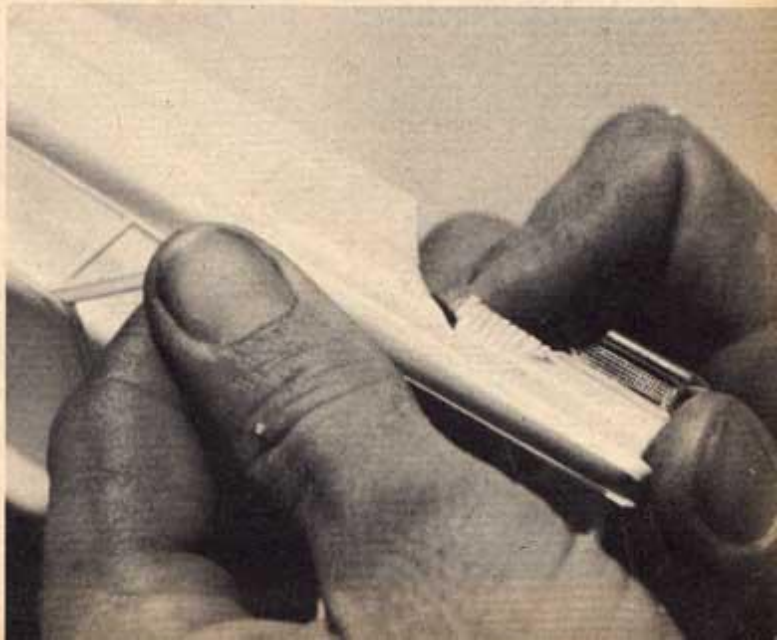
20. Grille assembly and taillight housing are put in place for a test fit.



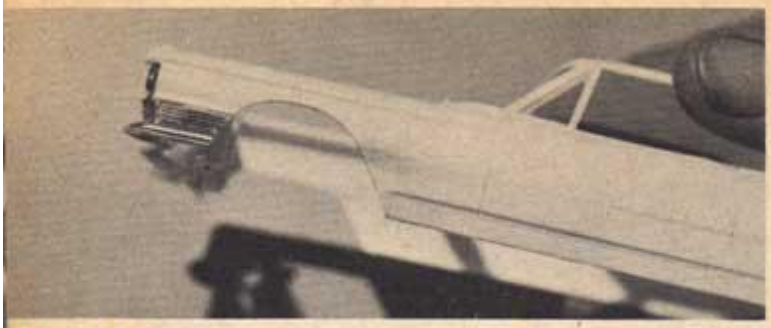
21. Front wheel wells must be reshaped. They are marked with a pencil.



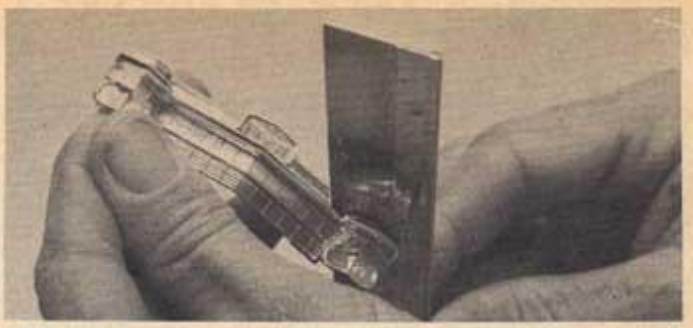
22. Slits are cut with saw, they are 1/16" apart.



23. Well is chipped out using an X-Acto knife.

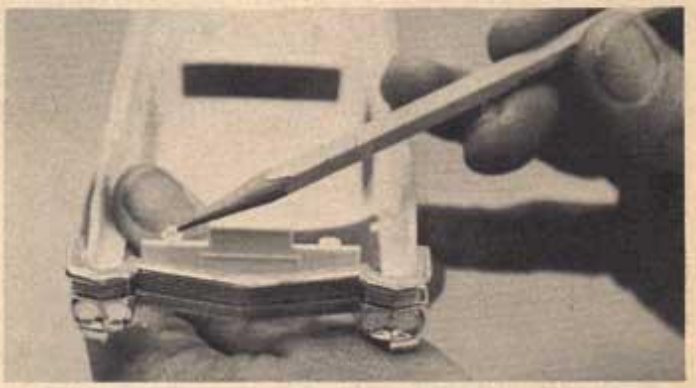


24. New well should be perfectly round.

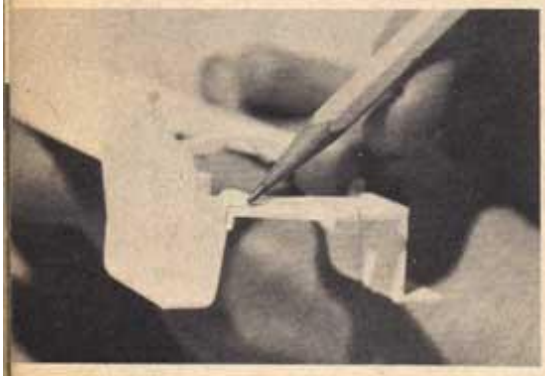


25. Cut front bumper away just under lower grille bar.

26. Front grille assembly is put in place to check fit.



27. Cut off round pegs on either side of radiator.



28. Notch panel where tab of body fits to chassis.

razor saw. Cut is made just below lower grille bar. Grille is temporarily installed on front of car.

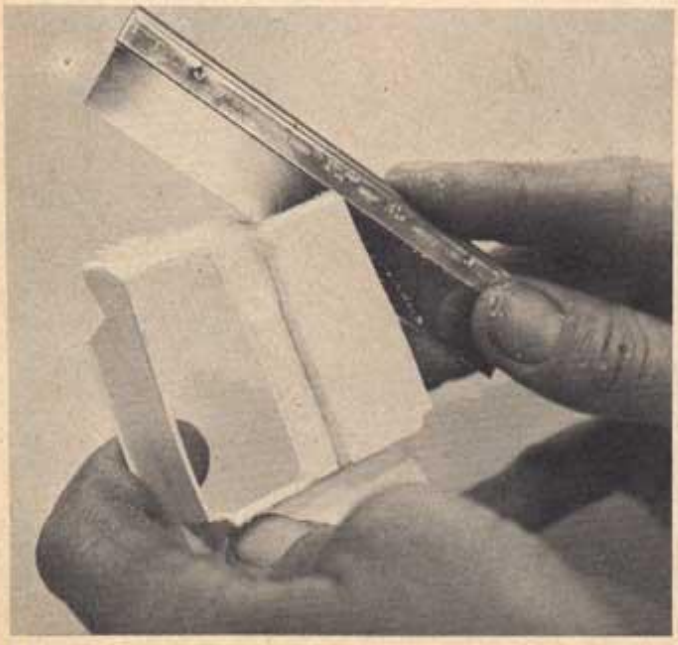
Remove small round pegs on each side of radiator. Notch panel where tab of body fits to chassis. From front: cut in even with frame rail, and on the side cut even with front edge of wheel well on both sides of car. These modifications are performed to allow chassis to set under the car body.

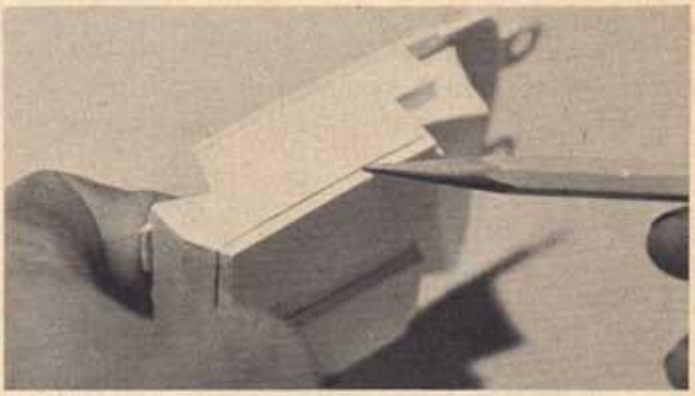
Last but not least is the modification of the interior package: Mark interior package 3/16" from bottom and cut with a razor saw.

All chrome ornamentation such as hood and deck emblems, side chrome and door handles are shaved off of body.

Remove chrome accessories which were put on for trial fit and prepare vehicle for painting.

29. Mark interior package 3/16" up from bottom.





30. Cut with a razor saw.

TABLE TOP RACING SECTION

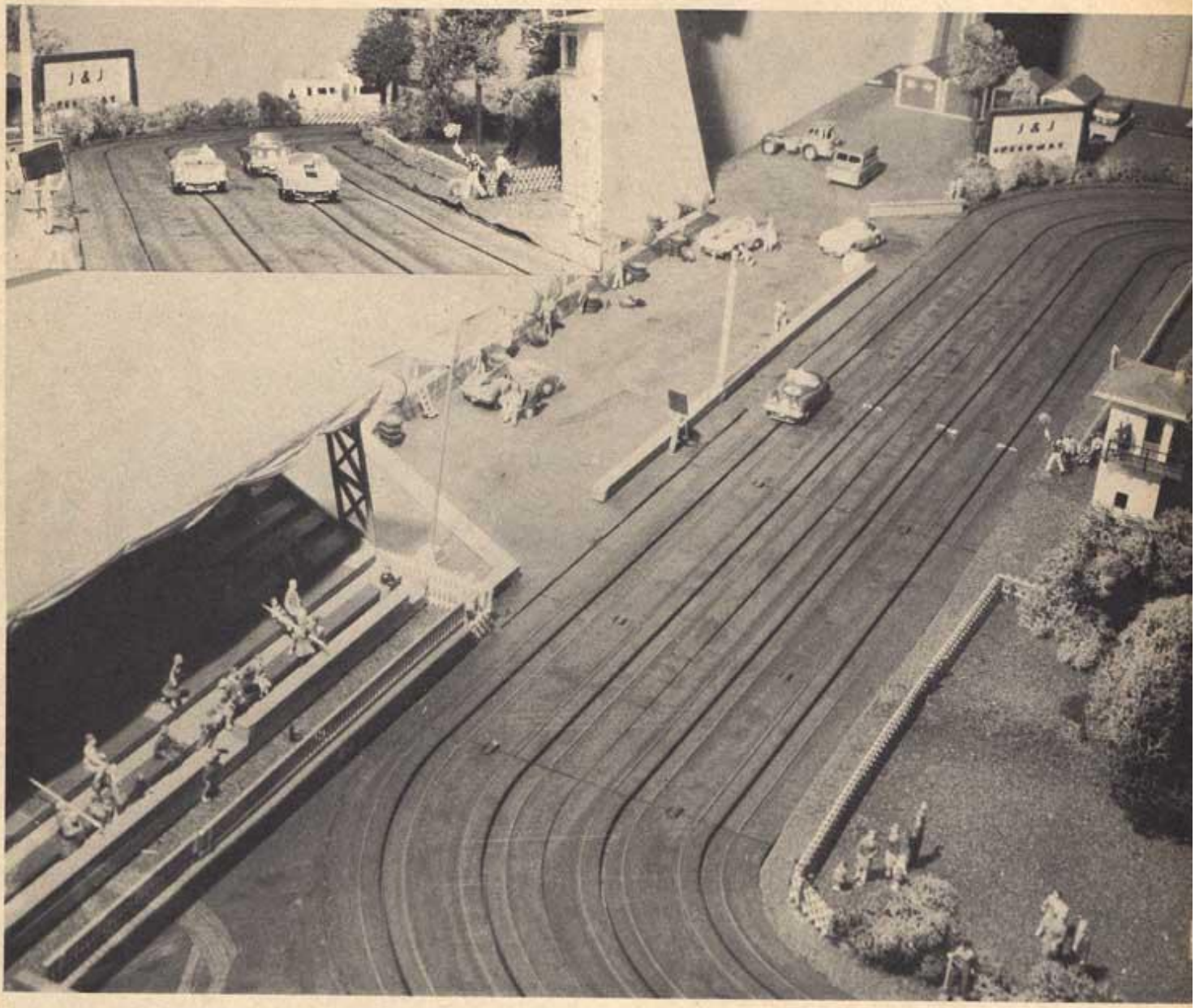
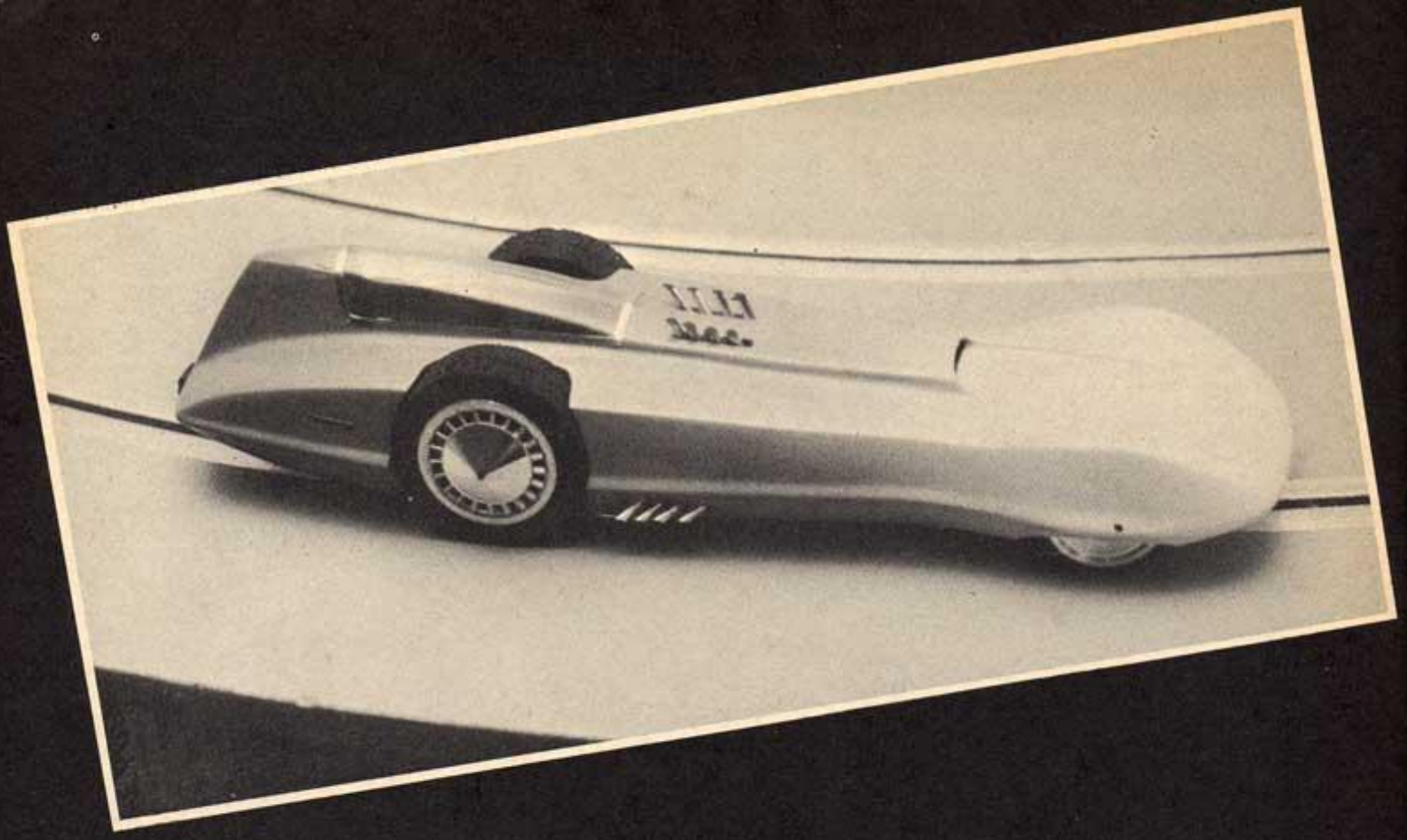


PHOTO CONTEST

Each month Model Car Science will award valuable prizes to the readers who submit the best photos of slot racers in action. Send your photos to: Table Top Photo Contest Model Car Science, 171 Barrington Pl., Los Angeles 49, Calif.

THIS MONTH'S PHOTO CONTEST WINNER IS

JOHN C. LAMONTE,
BOX 334,
WAUKEGAN, ILL.



MOTORIZE and/or SUPER DETAIL—

COMPLETING THE TWISTER can be accomplished in many ways. Three versions that may prove to be the most popular are: a static display model with full detailing, a motorized unit for model car racing or as an all out dragster. Regardless of the directions you choose, the opportunity exists to show your ability and initiative in completing a model built entirely from scratch.

Upon completion of the two body shell sections, all excess material must be removed that extends above the normal joining line of the two halves. Use care in this removal to prevent gaps forming between sections which would require filling with body putty after joining. With all excess material removed, sections should be cemented together and allowed to set overnight before final exterior clean up is started.

Close observation of the available photographs show little in the way of exterior detail that may be added to the model. Exhaust stacks and parachute fairing and cover are the only remaining details other than the lines appearing around the cockpit enclosure hatch. If a full size prototype were to be constructed, obviously many more lines and openings would be required for access to the interior components such as engines, fuel tank and quick change unit. Such openings or panels have been purposely omitted to avoid confusion as to their proper placing. They may be added at your own discretion.

Lay out and remove material for wheel openings and exhaust stacks. Leave openings somewhat undersize and bring out to full size after axle centers have been established and wheel assemblies can be used to check clearance.

One of the biggest headaches on this project was to find a combination of rear wheels and tires that would be somewhere close to scale. The usually large diameter used in this design eliminates at the start, all but the largest available ones used in slot racing. After considerable checking a combination of Dynamic models #609 wheels and K & B Modelrama #408, 1⅜ inch sponge slicks were used. These can be applied to both static and motorized versions, but are incomplete without the multiple vaned wheel covers. These required their share of head scratching for an easy way out before a solution was arrived at. It consists of the first stage of a Revell Allison turboprop engine compressor section. The diameter of the vanes must be reduced to fit inside the Dynamic model wheel rim flange. This necessitates the removal of about one half of the length of the vanes. Be very careful in this operation as they are very delicate and will tend to break at the root. The cone section is part of a hubcap from one of Monogram's 1/24th scale model A kits. File the back side of the hubcap until the outside ring will drop off. The center cone will now be the right diameter to fit the ring at the base of the vanes to complete the wheel cover. One of the stock wheels from the "A" kit is used to retain the wheel cover. Cut out the spokes and then remove a small section of the rim until it will just press fit inside the rim flange of the wheel. Cement in place. The wheel covers can then be glued to the ring.

The exhaust stacks were made by laying out four equally spaced holes in a small scrap of sheet plastic and drilling holes of a diameter equal to a short length of excess chrome exhaust pipe from any spare parts you should have

around. Cut into equal lengths and cement to the strip, which in turn is glued to the inside wall of the body after painting.

From here on, other than exterior painting, a decision must be made as to the kind of finished model you desire. Each will require a different approach and varying components will be used in their construction. Of the three logical choices one should appeal to everyone.

A short description aimed primarily at furnishing a concept to guide you towards completing your model in each of the categories may be beneficial, however these are by no means the only methods available.

STATIC VERSION

For those interested in a static model, a review of the cars components as described in P.H.R. Dec. '63 and our initial article in Model Car Science, March '64, should be studied. Many components are readily available in regular car kits or from the increasing amount of custom car parts kits produced by Revell. Excellent 427 cubic inch Ford engines are now available from Revell, Aurora and as a part of some A.M.T. kits. Most of the other major parts necessary such as front axle assemblies, quick change center sections, steering gear assemblies, fuel tanks, seats and frame sections may be found in currently available kits. Here is the opportunity to show your ingenuity, as the prototype has yet to be built, who can say but what your ideas are as sound and logical as the ones that will perhaps be used by the Ford engineers.

Engine location is defined by exhaust stack location and must be installed approximately 45 degrees from the vertical center line. No indication is given as to supercharging but to be competitive today, blowers must be used for maximum performance. To stay within the confines of the body shell they would have to be front mounted and crankshaft driven. Further indications as to components used and their location will have to come from the photos and the articles.

FINISHING

Any well finished model is the result of many hours of work. There is no short cut if a smooth finish, free of defects, is desired. Priming, wet sanding and additional priming are required to establish a proper base for final color coats.

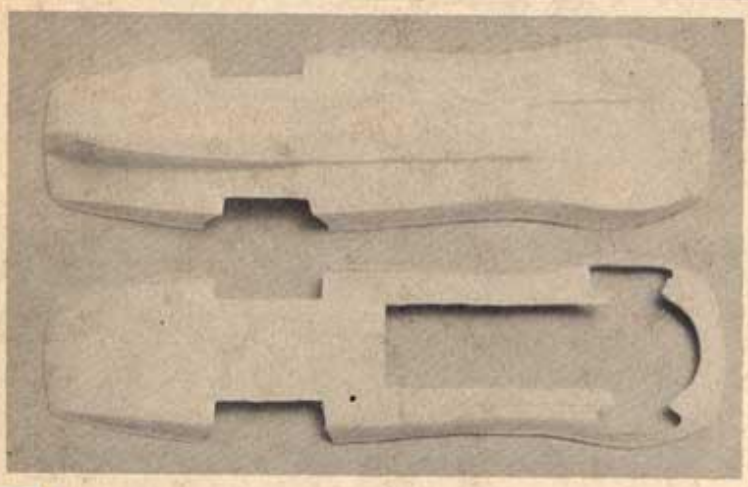
The unusual color combination of the twister, starting with white at the nose and finishing in fire red at the tail requires more skill in application than the average paint job. The use of spray cans is a must and a spray gun is even more desirable. Use a base coat of white pearl and apply the red from the back to the front. Use light thin coats and stop each pass just short of the preceeding one. Stop when you have a deep red at the rear gradually blending through pink to white. Two wet coats of clear were applied to complete the paint job. If any small imperfections in the surface exist, a light rubbing with an automotive cleaner and polish will provide a high luster.

SIMPLE MOTORIZING

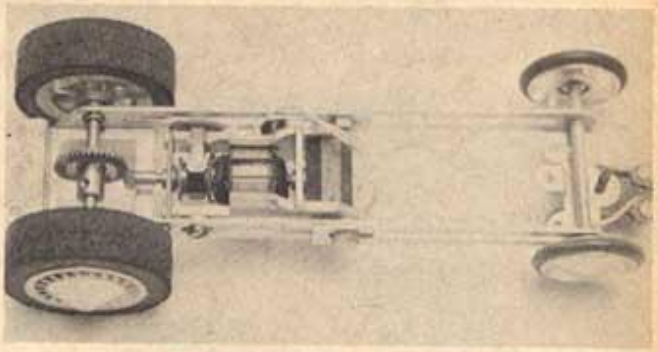
A chassis and motor combination that

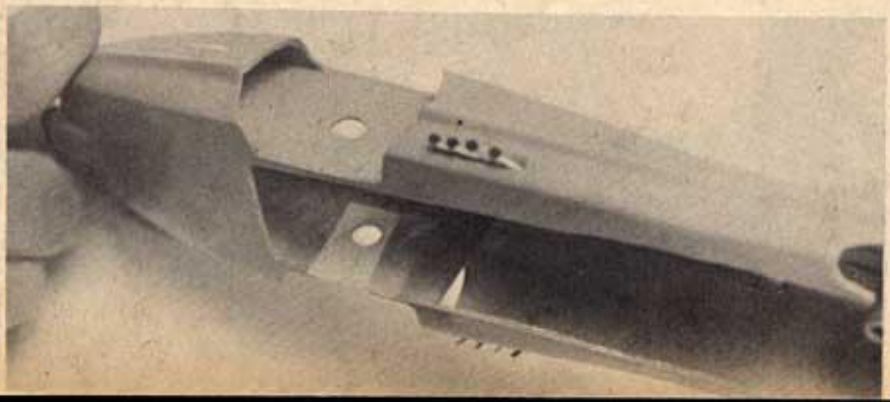
The Twister

By Bob Hoeppner



Body sections have had all excess material removed and preliminary openings made for wheels and chassis.

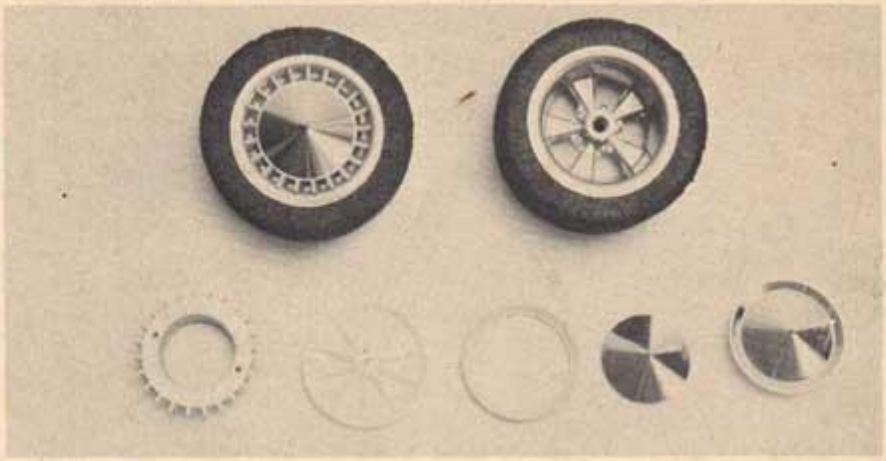




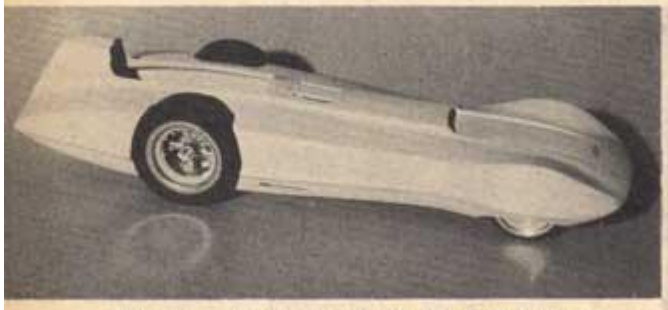
Basic chassis for motorizing ready for installation in body. Power is Revell RP-77. Gears are tradeship 4 to 1 and front wheel assembly is Speedway ball bearings dragster.

Body stiffening is required to support tail section due to large area removed to clear rear wheels. Cut webs to inside contour of body both top and bottom and extend both front and rear of opening for proper support.

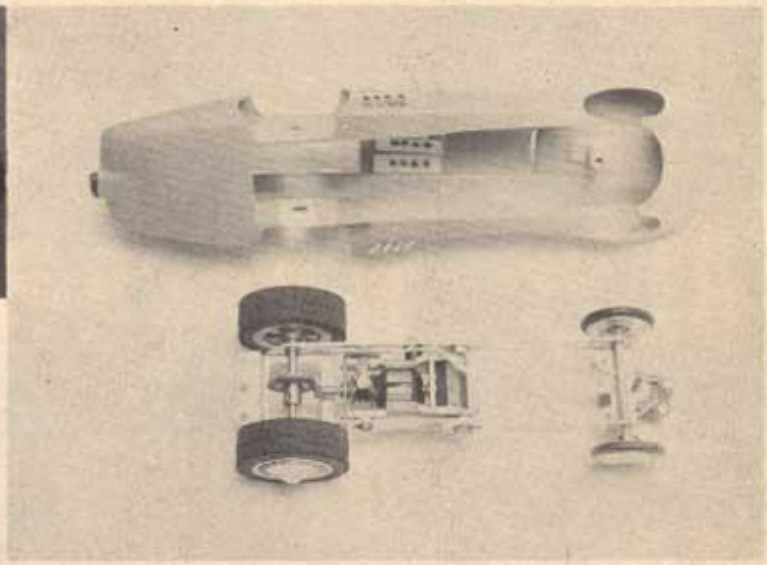
Left wheel is highly detailed while right is the easy way out (Monogram's Model A wheel disk just fits inside the Dynamic wheel).



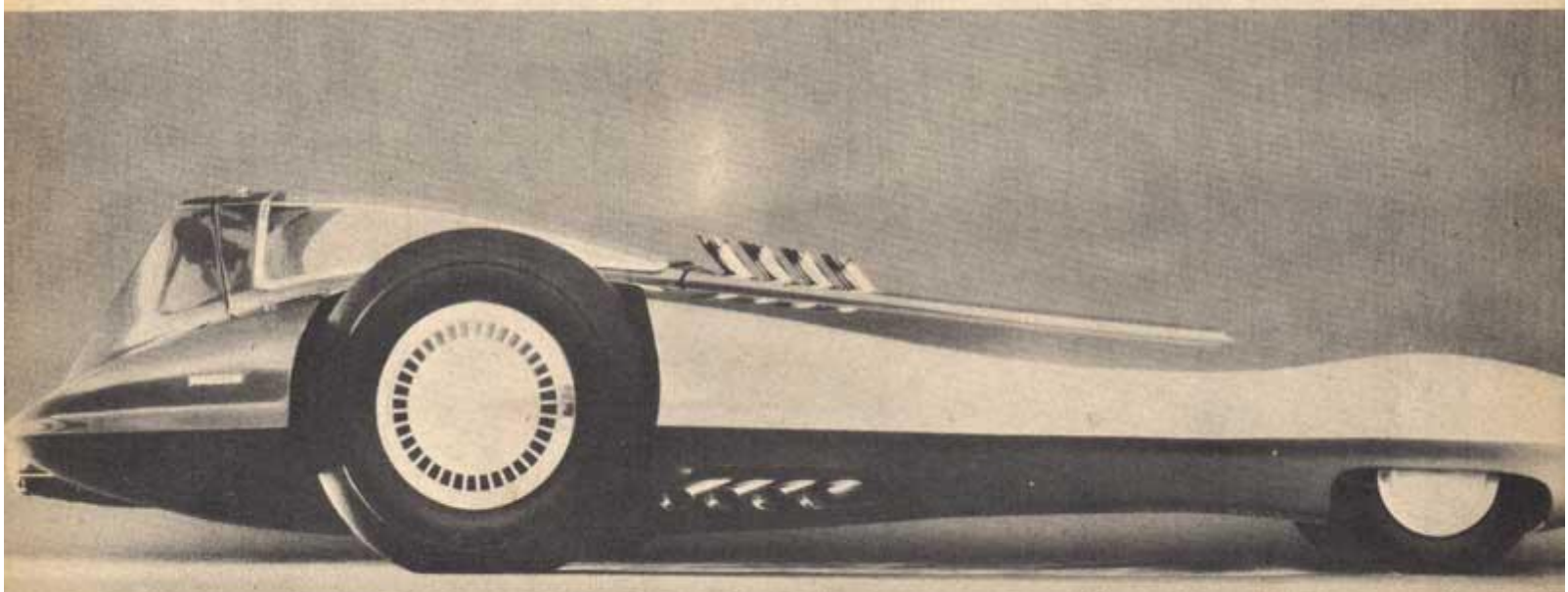
Dynamic wheel shown at right can be detailed to resemble the wheel at left by using vein section from Revell's Allison turboprop engine and parts from Monogram's Model A.



Chassis is fitted to body for final detailing.



By the time you reach this stage all the hard work is over with. Install the body and track test.



is easily assembled from items obtainable across the counter is probably the most popular method of completing the twister.

A Revell 1/32nd frame was used for this project. It is lightweight, will accommodate our wheel base, and was designed to fit the Revell RP77 motor, which has proven to be an excellent performer. The frame will have to be extended close to maximum length for this installation. It may appear somewhat weak at this length but will gain additional stiffness from the body when properly mounted. Tradeship 4-1 bevel gears are used to compensate for the very large tire diameter. A 3½-1 or up to 5-1 ratio can be used. This will depend upon the type and kind of track and performance expected. The Speedway ball bearing dragster front end assembly is a natural for this installation. Trim the axle to proper length and center it with small collars made of ⅛ inch I.D. brass tubing. These can be held in position with the locktite supplied when installing wheels. Our chassis is complete with the installation of a Revell guide shoe kit.

Some work will be required to provide chassis location in the body. After trimming away the bottom pan to allow chassis installation there will be very little body remaining to hold the tail section. This is supported by cutting two webs to fit the inside shape of the body and cementing to the top and bottom. They should be parallel and just outside of the frame rails, and extend sufficiently forward and aft of the wheel cutout to provide support for the tail section. Maximum support will be gained if only holes are drilled in the web to provide clearance for the rear axle. This does have one draw back in that rear axle must be installed in chassis after it is located in body, however it is not much of a problem. A small section of wood dowel, a wood block or a piece of scrap plastic cut to the proper length and cemented to the shell will provide location for the front end of the frame and can be held in place with a small self tapping screw.

A HIGH PERFORMANCE DESIGN

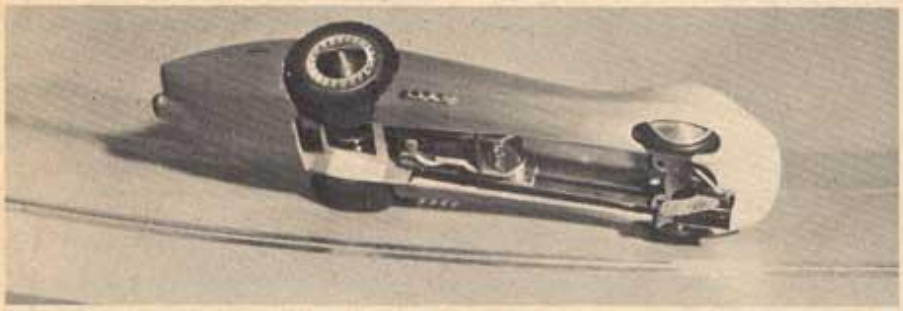
A high performance model will have many factors contributing to its excellent handling, acceleration and ability to be highly competitive. A motor of above average output is a necessary basis, installed in a well balanced good handling chassis. Added to this are many small factors all contributing their share in making a winner or also-ran. The fine points required are not the purpose of this article and will be left to the individual to experiment with.

The Kemtron X503 fits within the confines of the body shell and must be considered as one of the top performing motors and is used in this installation. Its location is reversed to that of normal sidewinder installation in order to maintain a scale rear wheel tread dimension. By rotating the motor 180° the magnet end is adjacent to the axle and the rear tires can tuck in behind the motor end plates. This increases the distance between armature shaft and axle and requires the use of an idler to keep gear diameters within reason. A combination of gears should first be chosen that will fit this type of setup and have a proper overall ratio and distance between centers before any construction is started. With this information the rear axle supports can be fabricated and installed.

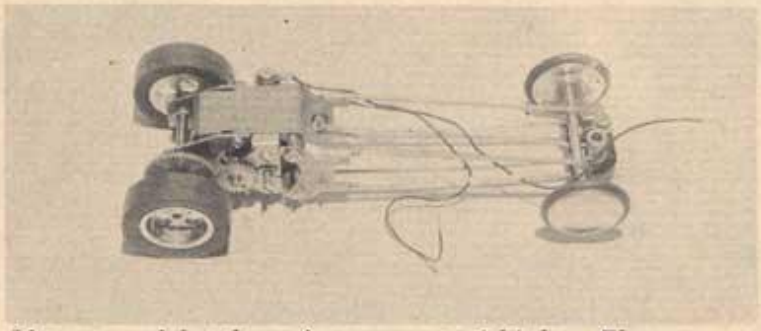
The idler gear can be installed to one of the support plates or on it's own bracket located to the motor end plate. This method has been used on the prototype to allow a slight amount of leeway in balancing clearance between all three gears. The motor end plate attach screws were too short to accommodate the extra thickness of the axle support plates and were replaced with 2-56 machine screws and nuts, 7/8 inch long and 1-1/16 inch at the front. Extra length at front was required to align front section of frame equally around center line. Short lengths of 1/8 I.D. brass tubing are used as spacers between motor and frame side plate.

The forward section of the frame is easy to construct. Motor brackets incorporate tabs that are formed into short tubes with an I.D. of 1/16th inch. Main frame members are of 1/16 inch brass rodstock formed around a short length of 1/8 inch rod that is used for the front axle. These should now be soldered together. The side members can now be inserted into the motor mount brackets and adjusted for proper length. Cutoff any excess and solder in place. The swing pickup is made of the same 1/16 brass rod, leave the ends of the "V" as formed about 1" wider than frame rails and spring in to the holes in motor plates. Solder a 1/8 inch I.D. washer to the apex of the "V" to form a bearing plate for the guide shoe. Trim front axle to proper length and install the Speedway Ball Bearing Dragster front wheels with the tube of Loctite provided in the kit.

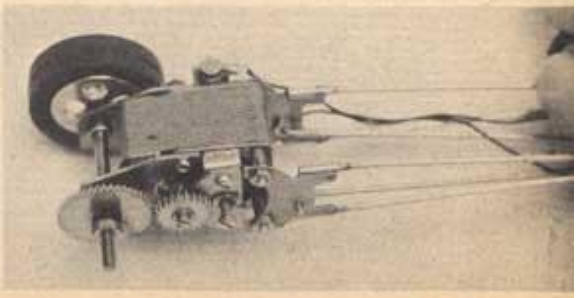
Install the body locating brackets. After all points have been checked for clearance and alignment. You are now ready for a trial spin, with proper adjustment and tuning there is no reason why you should not have a winner – in show as well as competition.



No we did not flip it. But just wanted to show the frame/body relationship as installed. Body stiffner webs are visible under rear axle.



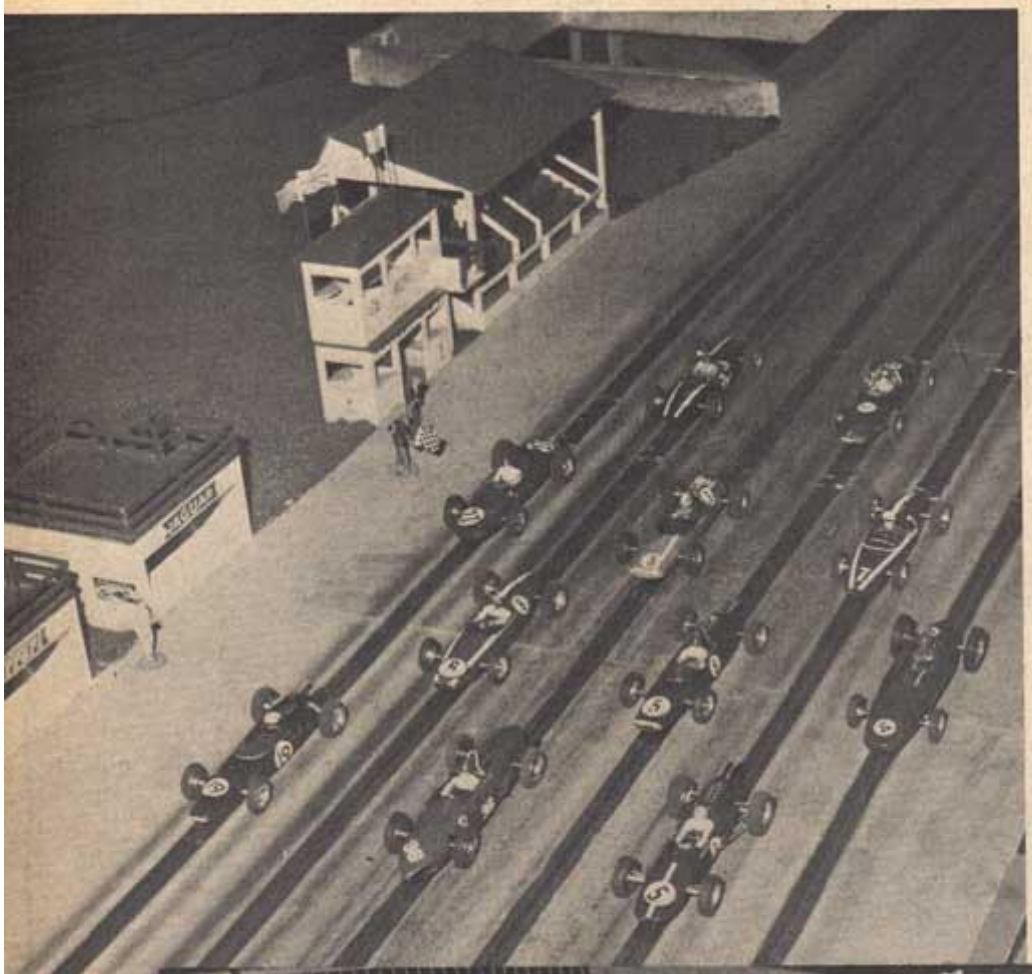
It's more work but the performance potential is here. The Kemtron X503 can be easily adapted to the confines of the Twister body.



Kemtron motor forms basic part of chassis in this concept.

MCS Spotlights: TRACK of the MONTH

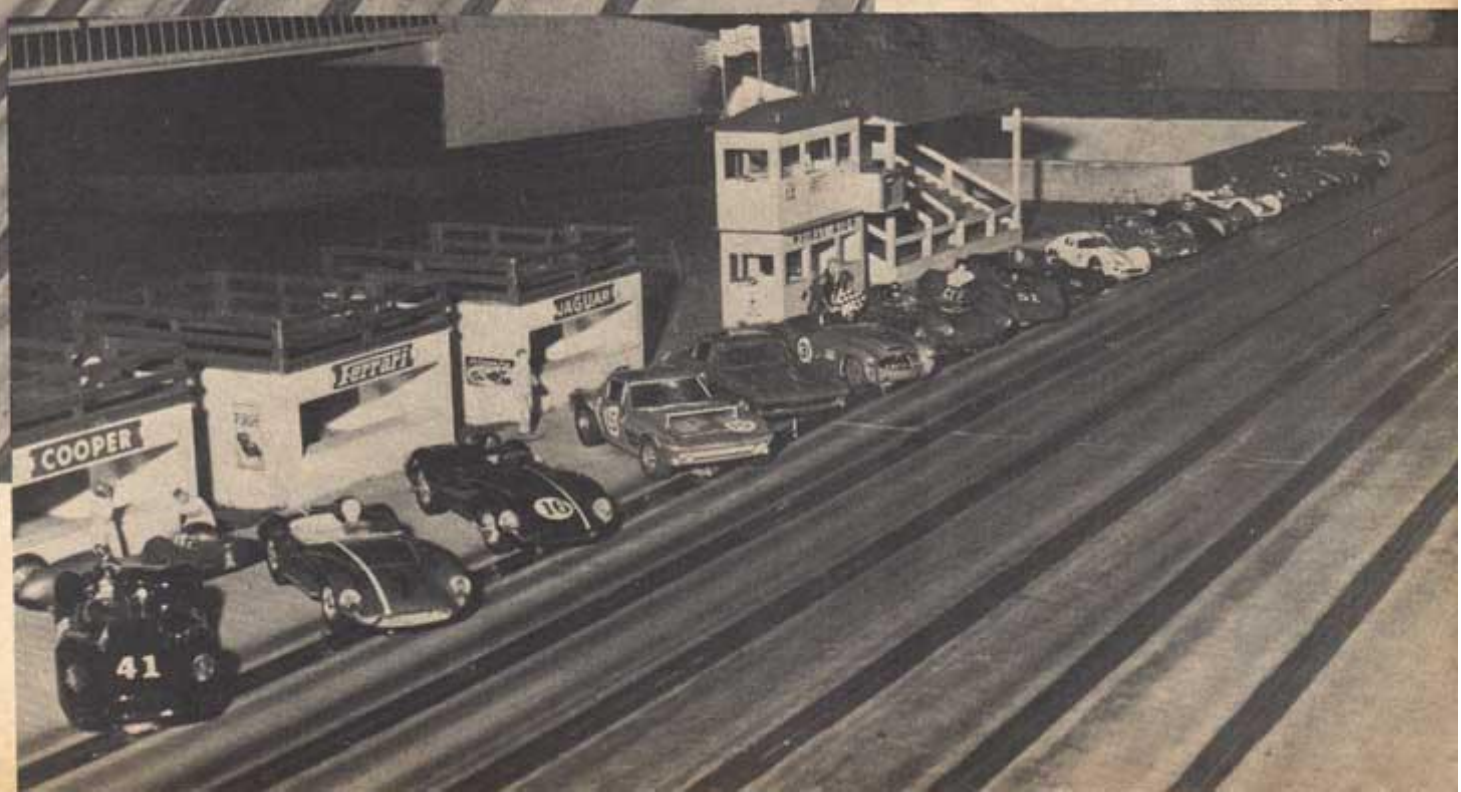
5th AVENUE HOBBY SHOP INGLEWOOD, CALIF.



THE MANCHESTER ROAD RACING ASSOCIATION was formed a scant seven months ago. During this time its members have developed an organization complete with table top racing rules for 1/24 and 1/32 scale cars, club colors, and scale cars. The M.R.R.A. holds weekly meetings at 8:00 p.m. on Thursdays at the 5th Ave. Hobby Shop, 2505 W. Manchester, in Inglewood, California. The 5th Ave. track is a six lane, ninety-four foot road racing course designed and built by owner Daryl Faulkner. The track features a high speed banked turn and an over and under pass which provides many thrills and spills. Five right hand turns and five left hand turns, all of equal radius, provide for an equal six lane road racing course. For added realism, the track is landscaped and contains a pit area complete with buildings, cars, and men. Each of the six lanes has its own 18 volt power pack and accommodates the three

This ninety-four foot road course requires lots of driving skill and the club car here can compete with the best anywhere.

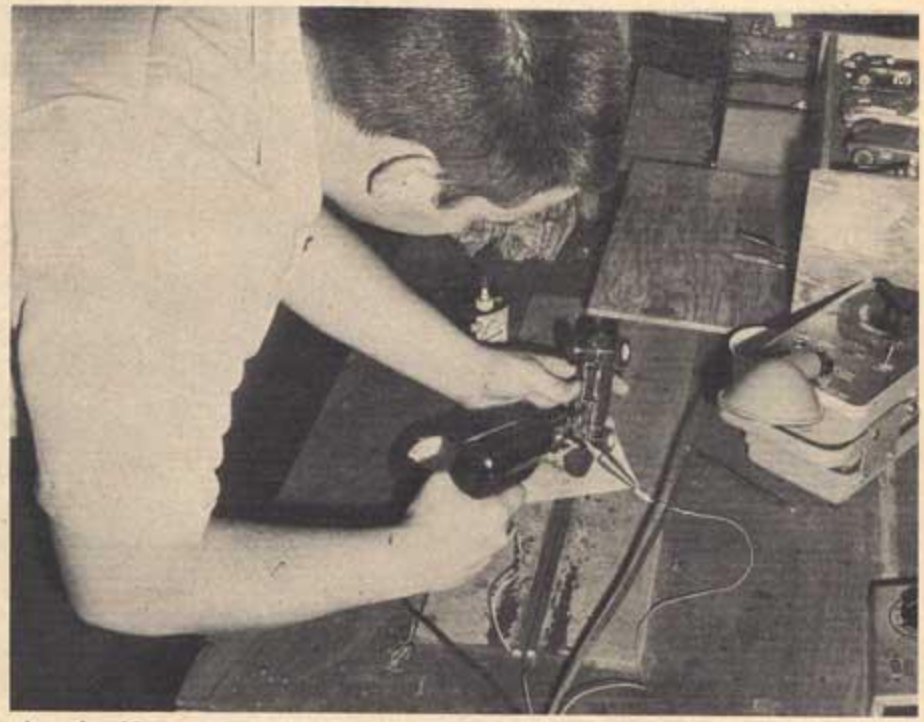
Members of the M.R.R.A. take a great deal of pride in their cars and track side scenery.



most popular scale racers – 1/24, 1/25, 1/32. A perfect view of the entire track is obtained at each of the control boxes.

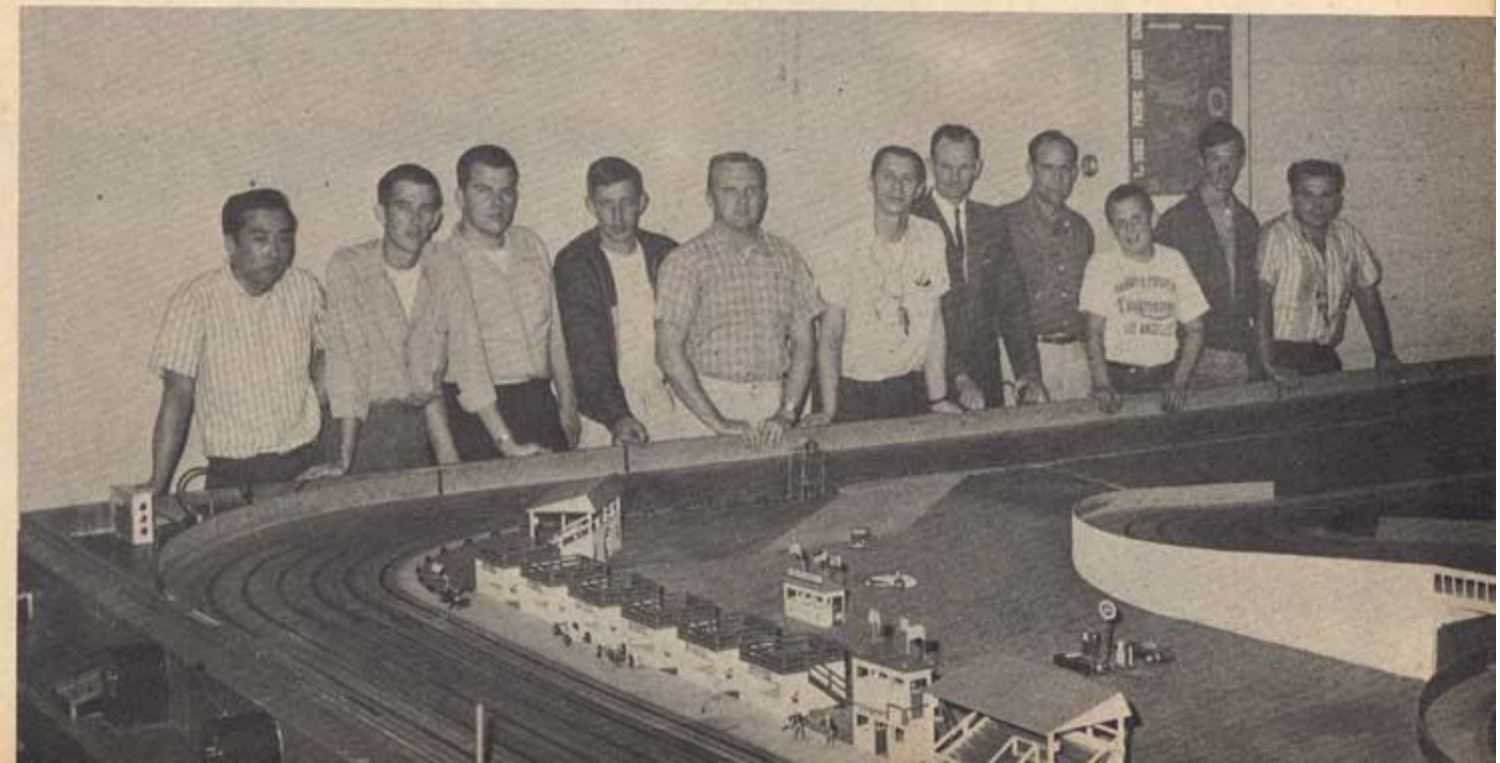
M.R.R.A. was formed to provide enjoyment for the true "scale" racing enthusiast and to further slot racing as a sport by adopting a realistic approach to the many problems of building scale cars. The members have succeeded in their aim of scale racing by demanding quality products and by sticking to the rules and regulations as imposed by the race committee presently headed by Herb Lee. Ken Babo, as President, has presented the members with many fine ideas towards scale racing which he has learned from his association with the MECCA slot racing club.

At the present time there are two racing seasons being run by the club. Formula 1 1/24 scale cars constitute one season while sport cars 1/32 scale constitute the other season. Special races are also held such as LeMans night, day enduros, and invitational meets with other clubs. The racing season is based on a point system with members vying for trophies to be given away at the end of the season. The club has set a membership goal of 30 and plans to develop a racing team composed of club members who must pass a rigid technical inspection of their cars.



A work table, complete with dynamometer, soldering iron and small tools, is available to racers for car tuning and major repairs.

MEMBERS OF THE M.R.R.A. IMPOSE STRICT TECHNICAL REQUIREMENTS ON ALL CARS RUN ON THEIR TRACK.



cobra

HERE'S A MUST FOR EVERY RACING BUFF THAT'S EASY TO BUILD

By Robert H. Scheicher

AMERICA'S most successful road racer is now available for your 1/32 scale stable. The car here uses the new Knight brand 1/32 scale Cobra body shell. This vacuum formed, clear plastic body comes complete with molded-in driver body and windshield. Your dealer may obtain it from Hi Quality or South Coast distributors in Los Angeles.

This body is easily adapted to the Strombecker chassis. The latest style black chassis should be used to obtain maximum strength and correct weight distribution. Drill 2 (two) 1/8 inch diameter holes in the front sides of the frame. They should be spaced 2-13/16 inches from the back axle centerline giving you the correct (90 inch) scale wheelbase.

Dynamic Models produces a 1/32 scale spoked magnesium style wheel which can be used to maintain an accurate reproduction of the prototype car. Revell wheels and wire spoked inserts from the XKE kit can also be used correctly, as both styles have been raced.

Threaded 5-40 axles 1-3/8 inch long should be used with nuts. The small 1/32 scale Revell tires can be used for the front, with Garvic "sponge" tires on the back sanded down to 29/32 diameter for scale size and smooth running. The prototype Cobras race with 8.20-15 Goodyear Stock Car Special tires on the rear. These huge skins are 29 inches in diameter and over 11 inches wide.

The wheels should be threaded on the axles and adjusted to a 1-5/8 inch center to center track dimension on front and 1-21/32 inch rear. The motor, gears, and pickup should be installed at this time and the chassis run and tested for proper handling.

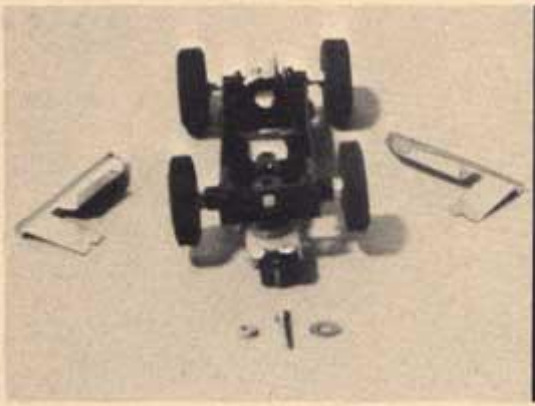
The clear plastic body comes trimmed only to approximate fender well contours. Cut the bottom edge of the body and the fender wells to proper shape using the photos as a guide. The number decals and painted details should be applied on the *inside* of the body first. Paint the primary color last, brushing around, not on, the decals. The drivers head is from an Ulrich mini-man, the rollbar from bent wire. The driver and windshield frame should be painted from the outside.

Cut an Ulrich body mount down the center. Remove enough from the *bracket end* of the mounting channel to fit between the wheels. Bend back half of the bracket and form a lip to hook over the side of the frame at the motor (see illustrations). The bracket can then be attached to the body sides, bolted to the chassis through the hole immediately in front of the motor. The rear of the bracket may be taped to the frame if necessary.

Check the body for proper clearances and you've added a Cobra to your stable!

The latest Strombecker black chassis. "X" marks the spot to drill for correct wheelbase.

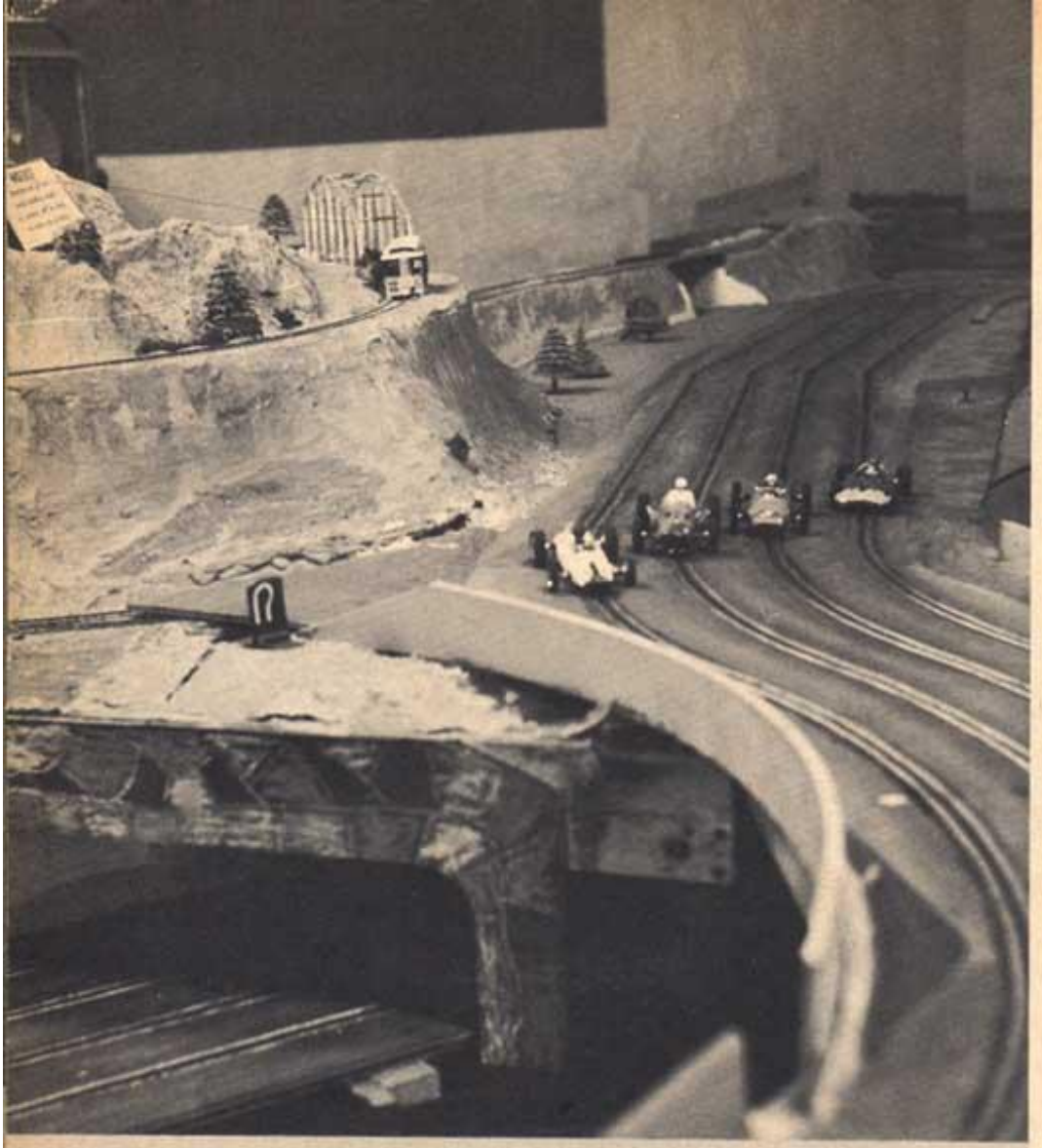
The Cobra chassis with front axle installed in its new position.



Ulrich body mounting channels cut and bent to fit the Strombecker chassis. Be sure to cut as shown to allow body removal.

The starting lineup with the Cobra, 250 P Ferrari and RSK Porsche in the front row.

Complete chassis with the painted and clear Knight Cobra body shell. Paint clear plastic bodies on the inside.



RACING IN THE ROCKIES

By Fred Tenderich

CLUB RACING has been the major activity here in Denver. One group, pioneered by Wayne Kaaz, started out with a small, scenic Strombecker layout way-back-when, and progressed to a larger, fancier four lane Scalex track in about 1961. About that time, I drafted some people to help me build a four lane track in my basement. The English and California suppliers took their sweet time responding to individual requests, so we told them we were the Rocky Mountain Miniature Racing group. It worked. They even answered letters!

The RMMR (just *got* to have call letters) races regularly, every other Wednesday night, on three tracks, the fancy one at Kaaz's Model Hobby Shop, a simpler but faster one at my house, and a tight fast track with a steeply banked Monza wall at member Doug Best's home. Most of the members have smaller tracks of their own, and we like to use another track when we can.

There are a lot of big, national slot-racing associations with "uniform" rules and hundreds of members. Take a long hard look at them. A little club with its own tailored rules has a lot of advantages. We try to keep our membership down to about 14 actively-participating members; but on occasion we've had over 20. Only so many people can get in a basement, and anyway, we still end up running from about 7:30 p.m. to 1 a.m. With the same guys racing for about three years, the competition is extremely close. It's common for 60 lap finals to have everyone on the same lap at the finish. That makes for nervous drivers with pretty sweaty armpits, and corner marshals who get yelled at like they just tried to pick a pocket.

Entry fee is a buck a man; and half goes to the track owner. The other half goes into a fund that grew to about 100 dollars in one year. We used to give trophies for class winners at the end of our 6 month seasons, but we now have a photo-electric lap counter lined up as soon as this instrument company finishes its government contract. Estimated cost — $40-$50! ! Soon as we get *ours*, we'll tell you who to write. We already have a portable electric lap counter. We've also had a dynamometer for some time; but since one of the parts is a tach drive off a jet fighter, I figured there's no sense writing a "how to" article on it.

Racing is split into several classes. One night will be Sports cars, both scales. Next meet, at a different track, will be GP cars, both scales. Then, two weeks later, at another track, we race 1/24 Formula Libre and 1/24 GT cars. Every so often, we have a novelty race.

At the end of last season, we formed teams made up of members from different levels of the final season point standings. Only 1/32 Strombecker coupes were allowed — one to a team. A few modifications — weight, gears, wheels, and tires — were allowed. The race was two hours, with lane changes every 1/2 hour. There were only four teams — another advantage of being small. My team led by 9 laps at the end of the first stint, then proceeded to strip one pinion gear and blow three Mabuchi's in a row, losing 30 laps. The first motor change only took 14 seconds, but we went to pieces after that and lost.

Recently, we had our first "pro" race, with guaranteed purses of $10 to the final winner, $5 for second, and $3 for third. Fourth place received nothing, so

it wasn't enough to just get into the final. This situation, as is every rule we argue about and define, was intended to make everybody race hard all the time. The cars had to be stock 1/24 Revell GP, with only axles, wheels, tires, and weight changes permitted. Each driver was in two heats, and had to collect heat points from a 4-3-2-1 spread (normally it's 5-3-2-1 to give a premium for winning). Super tuning the Mabuchi's almost resulted in equalling the absolute track record. Some Revells, with the simplest of changes, could turn 7 seconds flat on the 90 foot track where 6.9 is the record. Doug Best eventually won the 75 lap final, with his nearest competitor about 3/4 of a lap behind, the entire race. An extra surprise event was

This track, in the Hobby Shop, offers a sporty challenge to even the best drivers.

manufacturers were cheating though, so we just opened the door. Now, as is everybody else, we're having amp problems with the larger-draw motors, so we'll be doing something about that pretty soon.

Each race night, a different member gets stuck with being Race Steward and enforcing our one-page set of rules. If something causes a big enough fuss, a majority vote changes the rule right then and there. At any rate, the basic idea should be to decide what you want to do if you have a group that seems to race together a lot, and set down a few

Scale fidelity and authenticity are a must for cars belonging to members of the Rocky Mountain Miniature Racing Association. Members meet regularly to race on this track in the Hobby Shop at 38th and Federal in Denver.

the choosing of one lane, then holding 5 laps timed runs, running one car at a time the reverse direction. Only one member had ever run this way before. Some of the times were only .5 of a second apart.

The rules we use are a combination of some of the widely-circulated ones plus our own. The availability of a certain type product may often play a part in drawing up your rules. As mentioned previously, the result should be closer, more exciting racing. If only one slot racer could get soft tires, for instance, and the others had to run Strombecker 1/24 tires, you might want to do something about it. We used to check each car out with a volt meter and set the power between each race too long, so we got one power supply of 16 volts and only motors labeled "12 Volts" could be run. Soon, the basic rules if you think you'll need them.

Next month, I'll show some of the more cherry cars from around here. We've got some jazzy new tracks I'll show you too. Although from time to time I will stumble around and try to advance original theories mostly I'll just hide up in the mountains and try to shoot down other peoples' theories, like the "keep-em-light" one. So don't look for either the development of exquisite engineering principles (lifted from other books) here, or the rehashing of old stews like let's-all-get-together (the hobby is supposed to be fun and there shouldn't be a Big Brother watching you).

Long, fast straights, banked turns and overpass are evident here. Scenery is kept at a minimum, but what there is is accurately positioned as it would appear on a full-size course.

TYRES for TYROS

By A. M. L. Kennaugh

To a fair number of model racing fans, especially beginners, tires are merely something which go around the outside of wheels.

Let us examine things a little more carefully. If you read reports of full size races, you will note statements to the effect that Bloggs had retained his 'dry' road tires and could not hold Glupp in the rain as the latter gent had switched to rain tires at the start. Or that the MRB team had found difficulty in getting tires to suit their cars for the conditions they expected. Tires are tires you say, why the fuss?

Obviously the tire is there for one major purpose. To transfer the gees from the motor into mph on the road, to the best effect in the prevailing conditions, for the type of car to which they are fitted. To do this they must keep the handling qualities as good as possible both under acceleration and on bends.

This is precisely what the tires on our models have to do, and possibly more so as our driver cannot feel the back end twitch via the seat of his pants and take immediate action. If the light is now dawning, fine! ! Perhaps you can now see that if your model suffers from a twitchy rear end (tender is the expression) or your progress down the straight is somewhat retarded by frantic wheelspin, the trouble is likely to lie in lack of adhesion from the tires, and half a pound of lead in the back is just being cruel to motors.

What does the well dressed wheel wear? Your wardrobe should contain a nice selection of tire suitings in different sizes and shapes. Four or five years ago you took what was made or experimented in moulding your own, but now there is an excellent selection readily available. They come in round sections, square sections, 'normals' or slicks. With ribbed tread, nobblies and smoothies, in hard, medium or soft rubber, and even in a peculiar plastic material. First they must of course fit your wheels *securely*, and also be fitted *squarely* on the rim, wheel wobble is often only tire wobble. Square section tires must be fitted that way, square to the road. The purist will want to use correct to scale sizes but the 'impure' can try different sizes to give different drive ratios without altering the gears.

Now for the selection: There is no hard and fast rule for this but to generalize I would say that a slippery track surface favors soft tires of flat section where a goodly amount of rubber grips the road, but a surface with a reasonable amount of grip tends to harder round section tires. The only real answer is to get a selection and try them on your car and track until you find those that suit your driving and car best. If you visit another track this selection is most valuable as you can find out what the locals favor, and take it from there when practicing. Just as in real racing, the practice session not only enables you to learn the circuit, but to try suitable tires on your car. If you watch the experts this is just what they are doing so try the same.

It's the rubber on the wheel, not the lead in the back, that can spell win or also ran in a race.

Scale size of car and track surface are the two most important factors to consider when selecting the tire for your racer.

A VIEW FROM THE DRIVER'S SEAT

A PLEA FOR REALISM By Raymond E. Hoy

The slot racing sport has grown with almost alarming rapidity in the last few years. Like any other fast-rising industry, it has attracted its share of con-men, hustlers and sharks, that special breed of men who feed on the trusting and gullible public. The same type of men who made fortunes selling "momentos" that were supposed to "honor" the memory of our late, great President, John F. Kennedy. It is strictly up to the buyer to beware of these fast-buck artists, no one else can do it for them.

All-in-all, however, the slot racing industry has been remarkably free of this sort of man. The scattered instances here and there do not accurately portray our great sport. Most of the manufacturers have shown great honesty and zeal, trying to give the customer absolute top value for his dollar. To these people I take my hat off. Without them the sport would still be struggling in its infancy, instead of roaring along at top speed as it is now.

But where do we go from here? What is happening to our sport? Are we still progressing, I mean actually progressing with ideas, and not just a new version of an already obsolete chassis or motor, or other "mechanical" ideas?

We need more thinkers. More restless inventors who are not content with the conventional, the already-established. More authors like my friend and fellow writer, George Siposs. His revolutionary slotless system is still in its infancy also, but the point is that he is thinking, and this we desperately need.

I believe the one thing that will really bring our hobby into the same class with model railroading, (which has developed into an actual art) is REALISM. Already our cars handle beautifully, and go five times faster than they should. The only way to turn, in my opinion, is towards absolute realism. Let's take a look at this concept and see what we can come up with.

First of all, I want to voice a strong protest against the ridiculous trend of using VOLTS, VOLTS and MORE VOLTS! The cars went so fast on 12 volts that they didn't even look real, but some weren't satisfied, so they went to 18 volts and more. Their cars are blurs down the straights, and sweep through the curves so fast that the drivers are poking each other and saying "Look Harry, I THINK I saw my car drift through that curve!" Personally, I like to watch my cars go through curves with the tail hanging way out, as much as the next guy, BUT, I like to see a nicely detailed car doing the drifting, and not a fuzzy blur.

Stick around, I'm just warming up! To show you what a real radical I am, (I'm not alone, George Siposs and I agree on this 100 percent) I am using SIX volts on my layout, and it works perfectly, at least in my opinion. The way I see it, if the car goes fast enough to spin out, that means that I have all the speed and power I need. Try six volts some time, you'll be shocked. It's not all THAT much slower than 12 volts, and you can still over-cook it on a corner, so you still have to drive it, and not just push the controller down and watch it go.

Which brings me to the second highest complaint on my list. Why in the world anyone would want to build and race some of the THINGS that they call cars, is beyond me. I once made the mistake of going to a Chicago race meeting with my rear engined sports Ferrari, expecting to at least put up some sort of show against the windy city boys. My Ferrari is everything that I feel a slot car should be. The front wheels steer, the headlights and taillights work, and it has stoplights that come on when the car is braking for a corner, the driver sits in the cockpit with his arms working furiously, (they are connected to the steering wheel that moves in direct proportion to the steering front wheels) and it is painted in beautiful Ferrari Red and detailed as finely as I can get it.

Well, to make a long, painful story short, I not only got beat, I even got beat by their STREETCLEANER! It was running huge sponge rubber doughnuts on the back, just like all of their other thingies, and it no more resembled anything automotive than did their so-called sports cars. Now, don't get me wrong, I'm not complaining because I got beat, I've been beaten before, I'm protesting at the way I was beaten. Alright you say, why don't I too buy some doughnuts, and turn my Ferrari into a competitive machine. I'll tell you why. I never saw a Ferrari that looked like a butchered beach buggy, and I refuse to go that route, even if it means losing every race I'll ever run in. I might run dead last, but I'll still be getting a blast out of watching that gorgeous car of mine drifting cleanly through the corners. My Ferrari handles, at least by sane standards, beautifully, and I don't intend to sacrifice detailing and beauty for more performance. Not at that price.

I belong to a small club of hard-core enthusiasts. We all think practically alike, and the results are gratifying. Our races are always close, as all cars are always in top condition when they begin the race, and they're not so overtuned that they fall apart half way through the race. We have given much thought to making the races realistic, and I believe you and your club would enjoy some of our experiments at realism.

Our track has four lanes, braided, and as I have said, uses six volts. Each lane is wired for dynamic braking, and all hand controllers are connected to stretch telephone cords that go to a jack box. Each lane is metered so every competitor is sure of having as much power as his adversary. We start the race with all four cars setting dead on the main straight in front of the pits. The race is started by turning the master power switch on, thus avoiding the possibility of any "Texas starts," where one fellow blasts off somewhere between the time the starter says Set . . . and Go.

Our track has a splendid pit area, with switches leading into and out of the pits. We have mandatory pit stops on the 30th and 60th lap of a 90 lap race, and during these pit stops the driver must change both rear wheels. The fumbling and excitement during these pit stops are as much fun as the actual race. The object is, of course, just like in real sports car racing, to build up a big enough lead so that you can come into the pits, change wheels and be out and away before your competitor does. Races can be won and lost right in the pits.

We try to run long events half in daylight, and half in darkness, using headlights only. If something happens to your headlights during the race, you must slow sufficiently to bring your ailing machine into the pits and repair it, and try to get back in the race and hope something happens to your competition.

Our events are run very close to 1/32 standard ruling, except for the 6 volt power supply. We have a spare 6 volt battery, and occasionally hook both batteries in series and run 12 volts for awhile, just to keep our hand in, but we always wind up going back to six volts.

It's a great hobby, and there are new things coming in all the time. If you WANT doughnuts, and 100 volts, then by all means do it. I have tried it and disliked it, but then maybe you will try six volts, and dislike that too, so there is always room for more ideas. That is what makes slot racing so great.

Let's just settle back and enjoy our sport. Choose your equipment carefully, and take your time and build it right. It's not only a great action sport, it's a great leisure-time hobby, where many enjoyable hours of painting and painstaking labor can be spent. Let's follow the model railroaders into their magnificent world of realism and enjoy our sport to the limit.

PUT BRAKES ON YOUR CAR

...to make it go better

by George Siposs

Sounds paradoxical to most of us but it is true: to make a car perform better put better brakes on it! Here is the reason why. The longer we can keep up the speed before we slow down for a turn the faster our lap times will be. Going deeper into the turns necessitates a more efficient braking system to decrease the car's momentum to a safe value. Any corner-and car combination has a theoretical maximum speed at which it can be negotiated safely. Go faster and you crash out. Go slower and you lose time. Slowing down for a turn after a long straight can take as many as 2-3 feet. Some of this distance could be used to travel at a faster rate IF we had brakes to slow the car in a shorter distance.

The friction of the tires, gears and motor is not sufficient to serve as a brake. After all, we spend hours on making the car more frictionless. No wonder that it just coasts to a stop when you remove your thumb from the control.

Many attempts have been made to equip slot cars with brakes. Controlling the brakes is the difficult part. A small mechanical "band" brake can easily be mounted on the car but, making it go on and off is difficult. One of the solutions is to put an overrunning device on the motor shaft and a small brake on the shaft extension. When power is applied the brake "over-runs" and is ineffective. When the power is removed the inertia of the brake drum actuates the brake shoes.

A third tape can be added to the existing track tape on sections just before corners. A third pickup is connected to an electromagnet on the cat which actuates the brake mechanism. It is obvious that the length of the third tape controls the brakes regardless of the speed of the car so this system is also inefficient.

The greatest breakthrough came when someone went back to the basic theory of the D.C. motor and reasoned that a D.C. motor, when driven by an outside source acts like a generator and thus dissipates power. Here is the reason why: a simple D.C. motor with permanent magnets in it (the type we use on slot cars) has a magnetic field across the poles. The electricity applied to the motor terminals reacts with this field and the final effect is that electrical energy is converted into mechanical energy. We harness this energy by a gear train driving the wheels. When the source of electricity is removed and the circuit completed, electrical current can be made to flow in the circuit when the motor is rotated. The generator effect is the exact opposite of the motor in that mechanical energy input causes electricity to flow as a result of interaction of the armature and the magnetic poles. The mechanical energy part (input) can be derived from the momentum of the car. Since there is direct gearing between motor and wheels, the wheels will turn the motor when the car is slowing down. Driving electricity through the circuit dissipates a lot of energy and the car is rapidly brought to a halt.

If the track is wired properly, an addition of a braking system is easy. In addition to the power (+ & −) terminals, a third terminal is available to which a third wire from the hand control is connected. The function of the third wire is to cause a short circuit connection between the power tapes (i.e. between the motor terminals). Obviously if this "short" existed when power is applied, the car would not move and the power supply and control would burn out. The hand control is modified suitably to act as a single-pole-double-throw switch. In one position this "switch" is used in the

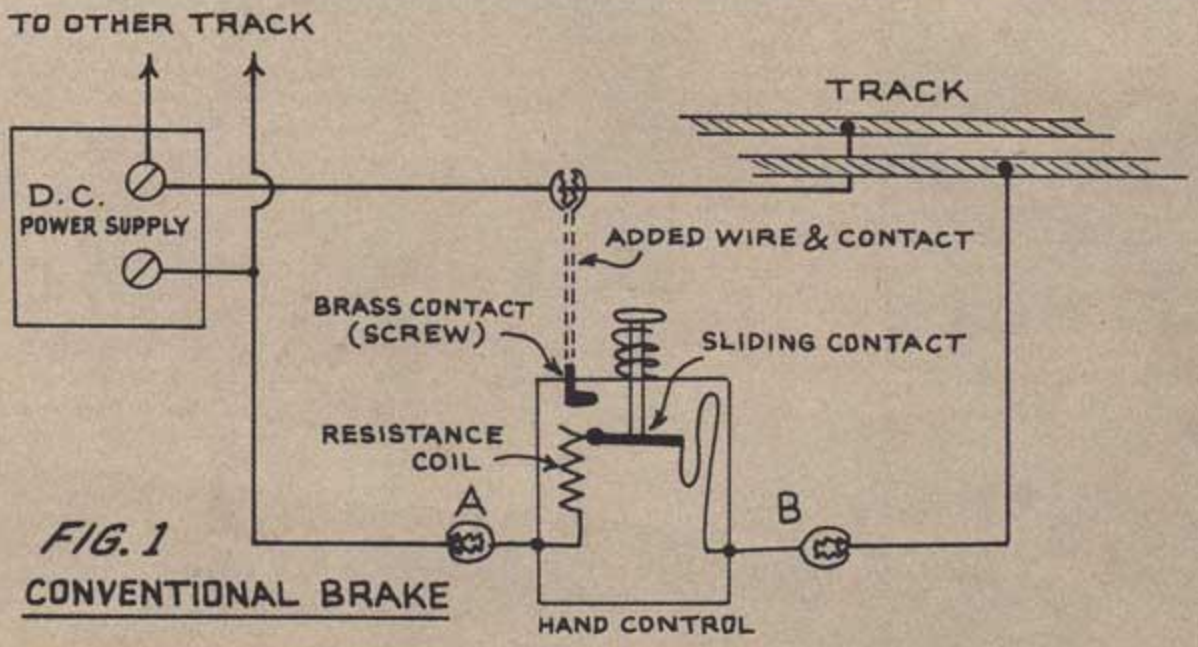
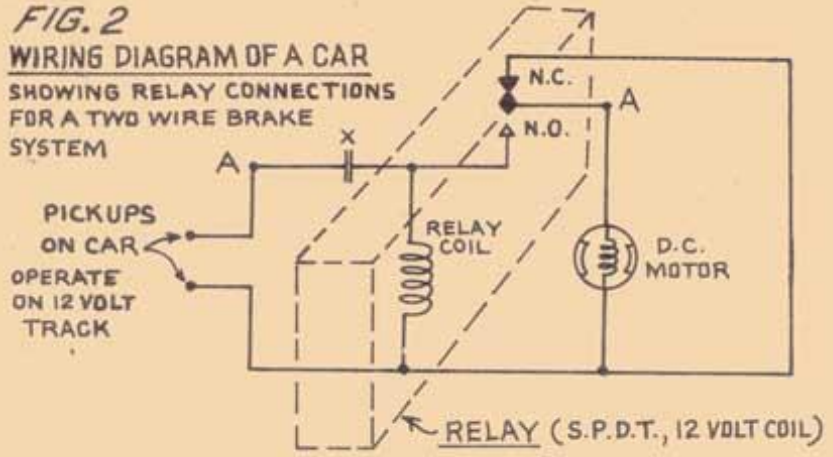


FIG. 1
CONVENTIONAL BRAKE

WIRING DIAGRAM OF REWORKED HAND CONTROL and "THIRD" WIRE ON TRACK

FIG. 2
WIRING DIAGRAM OF A CAR
SHOWING RELAY CONNECTIONS FOR A TWO WIRE BRAKE SYSTEM



conventional manner i.e., as a power control. When the control is released, the spring action forces the button up thereby closing the circuit between the power tapes. Since there is no appreciable resistance in the circuit, maximum current is allowed to flow as a result of the generating action. Maximum current requires maximum mechanical energy input (into the generator) thus the car will decelerate very rapidly. If less braking force is required a resistance has to be put into the circuit to prevent a high current buildup.

The addition of the third wire and terminal to your existing track wiring is very simple. The re-work of your hand control is not much more complicated. When you take the control apart you will notice that one of the incoming wires is connected to a coil like device. This is the resistance coil. The other incoming wire is connected to the sliding contact. If we add a third wire to the control and terminate it into a contact which is touched by the sliding contact in its relaxed position, the electrical braking system is completed. (See Fig. 1). Make sure that all wires are properly labeled. Connection A goes to the power supply, B goes to one side of the track while C goes to the other power tape. (If A and C are interchanged, the car will run backwards. If C and B are mixed up, your hand control will burn out. If B and A are mixed up the power supply will burn out when the control is in the braking position.)

Some commercial tracks do not have the third wire connection for braking. Perhaps the operator is not alert to latest developments, perhaps some club rules prohibit brake connections. Since there are no rules against building the brake *into* your car, here is an ingenious way to have an electrical brake in your car. It operates *automatically* every time you remove power from the track, i.e., every time you let the button up.

The hand control is not altered at all, however, a small relay has to be mounted into the car. The relay has a *12volt coil* (or whatever the voltage is on the track) and it has a single pole double pole set of contacts. (SPDT)

Most suitable relay: Type KM5D Weighs ⅝ oz. Size 1⅛" x 53/64" x 25/64" 2 amp. Contacts. "Allied Radio" Catalogue NO. 76P362
Price $3.35

Other suitable relay (for 1/25 cars): RS5D Size 1⅝" x 1" x 1¼" Guaranteed for 10 million operations. Operates in less than 25 milliseconds. Releases in less than 5 milliseconds. "Allied Radio" Catalogue NO. 75P504
Price $2.75

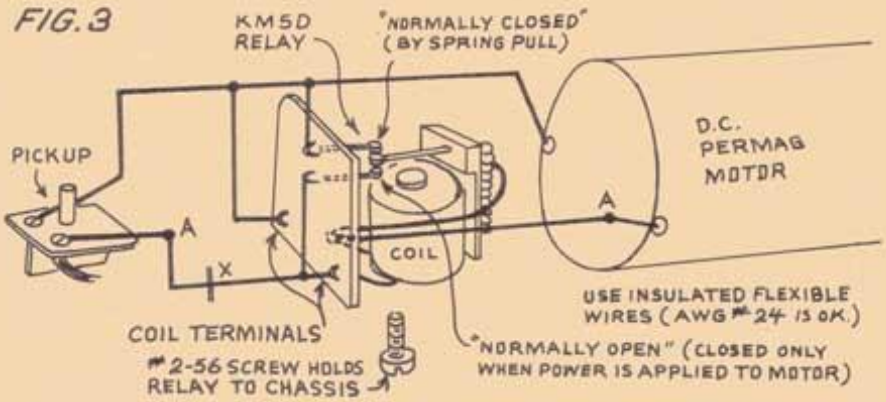
The Potter and Brumfield Co., makes several suitable types of relays all of which can be purchased in radio supply houses. The price can vary from $1.75 to $3.50 depending on the size. The miniature high-precision relays cost more than the larger commercial types. If you are in 1/25 or larger scale there is no problem with space. The relay can be mounted on the chassis especially if you use a sidewinder motor. In 1/32 scale there is no problem if you use a small relay in a GT body. I have successfully used a subminiature relay in a Strombecker chassis mounted between the chassis members in front of the motor. (Cut out the small cross member and relocate the body mounting screw). The relay contacts should have at least a 1.5 amp. capacity. Some relays operate in less than 20 milliseconds which means that even at the highest speeds the brakes will go on in less than an inch of forward movement.

Briefly, the operation of this system is as follows: When power is applied by the hand control, the relay coil is energized and it becomes a magnet.

This magnet pulls the N.O. (normally open) contacts closed and power is now applied to your motor in the conventional manner. When you let up the button completely, the coil ceases to be a magnet and the N.C. (normally closed) contact closes thus shorting out the motor terminals. The action is instantaneous. You will notice that at some point the contacts might buzz a bit indicating that the coil does not receive enough voltage. This is in the low end of the power range and all you have to do is push a little harder on the button. No special skill is required to operate this brake. Each car has to have a relay of its own. If no brakes are required, simply slip a piece of plastic between the relay contacts blocking them in such a position that the motor will not be affected by the contacts opening and closing. If you want to deactivate the brake but don't want to remove the relay from the car, cut the wires at point "X" and connect points "A-A" together. (Fig. 2 & 3).

A relay type brake can be used anywhere regardless of whether the track is wired for brakes or not. With no apparent third wire on the track violent deceleration of your car should be a real surprise to everyone at the next club meeting.

FIG. 3



SCHEMATIC WIRING DIAGRAM OF A CAR WIRED FOR "RELAY BRAKE"
RELAY TYPE SHOWN HERE: P&B. KM5D S.P.D.T. -2A 12 DC

Simplify your Racing SCHEDULES

ORGANIZE CONTESTANTS WITH THIS EASY TO FOLLOW METHOD

By Dick Dobson

PLANNING and organizing racing events with a large entry can be a real headache. Of course even weekly race meetings with the local club have to have some form of schedule. There are all sorts of formulas and cryptic symbols that are arranged to let each entrant race once on each lane against a different opponent each time. Still, when the Chief Marshal reads off the next race, the ranks are filled with such remarks as – "What lane am I in?" "Am I in this one"? "Need some marshals on the bridge." "Where is Jim, he's in this race."

This little gadget takes about ten minutes to nail to the wall and another ten minutes will mark in the lines on enough strips of poster board to last for months.

Fasten two six ft. lengths of picture framing stock to the wall about 5 in. apart. Draw lines about 1-1/2 in. apart across a piece of poster board 3 ft. square. Now cut the poster board into 5 in. wide strips, or what ever will slide into the channels of the picture framing stock.

One sheet we will call sheet "A," this will have an entrant's name written at the top of each column. This sheet will be stationary and will mount above the slide. Sheets "B1" and "B2" are identical, each having the color of each lane and the letter identifying each marshaling position.

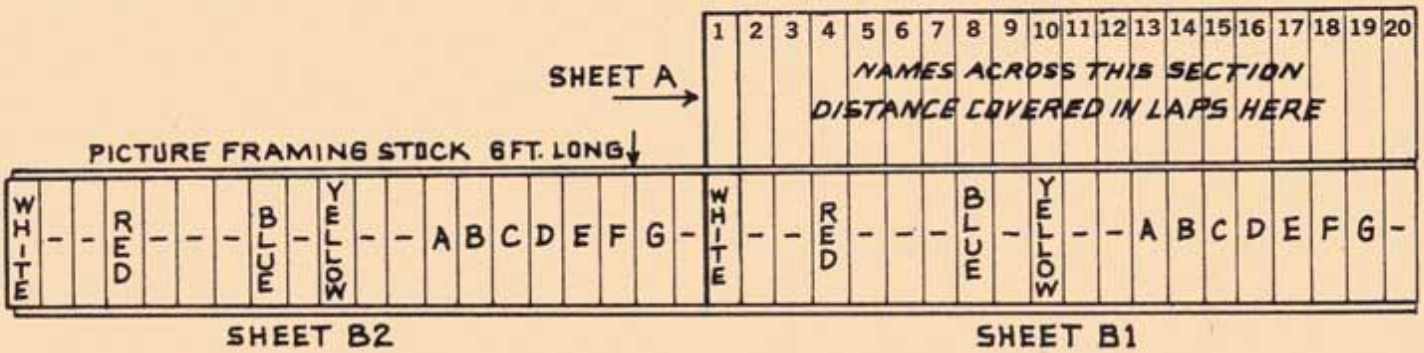
When the number of entries is determined, the two "B" sheets can be stapled together. They will have exactly twice the number of columns as there are entrants on sheet "A."

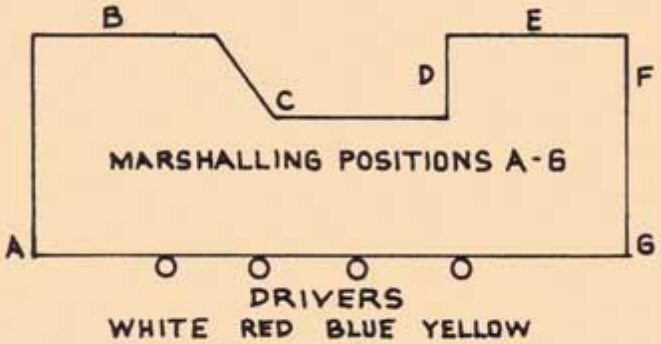
Looking below the driver's name, he can tell at a glance not only where he is in the present race but by looking to the left one position, he can also tell where he will be in the next race. As each race is finished and the score is registered on sheet "A," sheets "B1" and "B2" are slid one notch to the right.

It is much more difficult to explain than to do in this case but if you will look at the diagram and note that while Drivers 1, 4, 8, and 10 are racing on WHITE, RED, BLUE, AND YELLOW respectively, number 20 has a rest. Then, as the "B" sheets are moved to the right, number 20 will marshal first at G, and then F, and so on until he has completed his marshaling.

The amount of entries, marshaling positions, slots, etc. will make this vary, but it will work for any event as long as you have as many entrants as driving and marshaling positions.

We usually keep sheet "A" for a permanent record for big events, but for regular meeting nights we have sheet "A" covered with vinyl plastic. The driver's names can be written on with grease pencil and wiped off for the next event with a rag. This way all we ever have to change is the length of sheets "B1" and "B2."

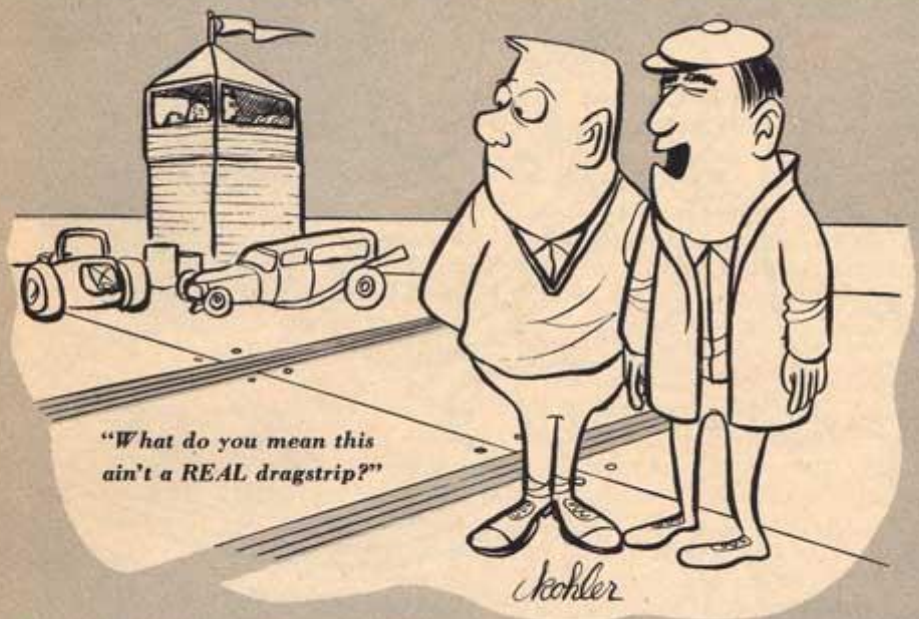




SHEETS B1 and B2
SLIDE TO THE RIGHT
AS RACE PROGRESSES

MY FRIEND McTRACK

(or, This Kid is really gone on slot racing).



"What do you mean this ain't a REAL dragstrip?"

As we entered his house, my friend McTrack had a tongue-in-cheek attitude. Though he did mention his fabulous tracks to me several times, I really thought that he was just kidding. Those fabulous races of his must be daydreams . . . I thought.

Then he reached down and started rolling the carpet to one corner of his room. I gasped. There, under the carpet, was the craziest slot track, cut right into his hardwood floor. Esses, crossovers, chicanes, long straights . . . the works. "I could not find a big enough table, he said, so I decided to utilize unused space." His living room was L-shaped and under the carpet, unfolded, literally, the most fabulous track I have ever seen.

Then he stepped over to the Hi-Fi cabinet. Within a few seconds he let go with the weirdest sounds that a stereo tape could hold. From every corner of the room, or so it seemed, the woofers and tweeters resounded with Ferrari and Maserati revups. At one point I jumped aside to clear the track for the Formula 1 car that seemed to run right through the room from one stereo speaker to another.

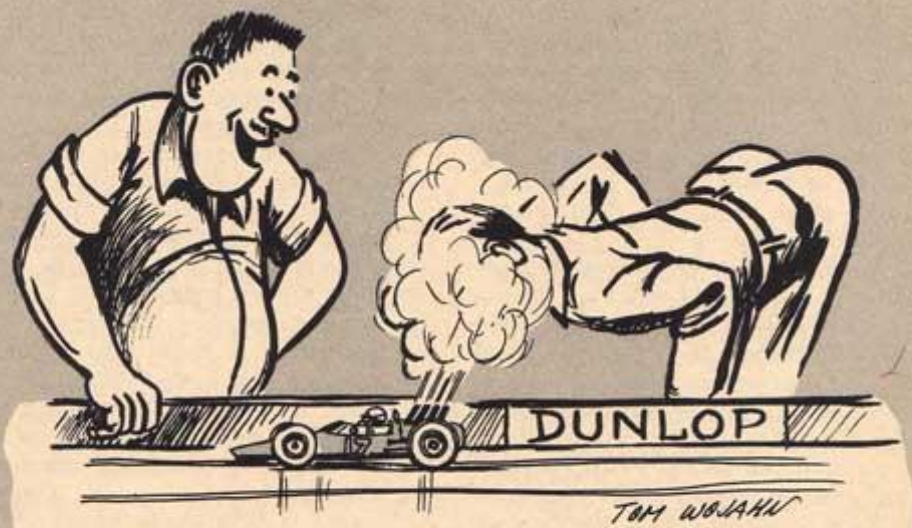
At the touch of another button, two model racing cars rolled out from under the bookshelf. They rolled to the starting line and poised ready to start. "Shall we race?" I asked. "No, not yet, not until I create the atmosphere . . ." said McTrack.

No sooner said than done, he started up a small pot of Castor oil in the kitchen. A bit of rubber sprinkled on another burner completed the scene.

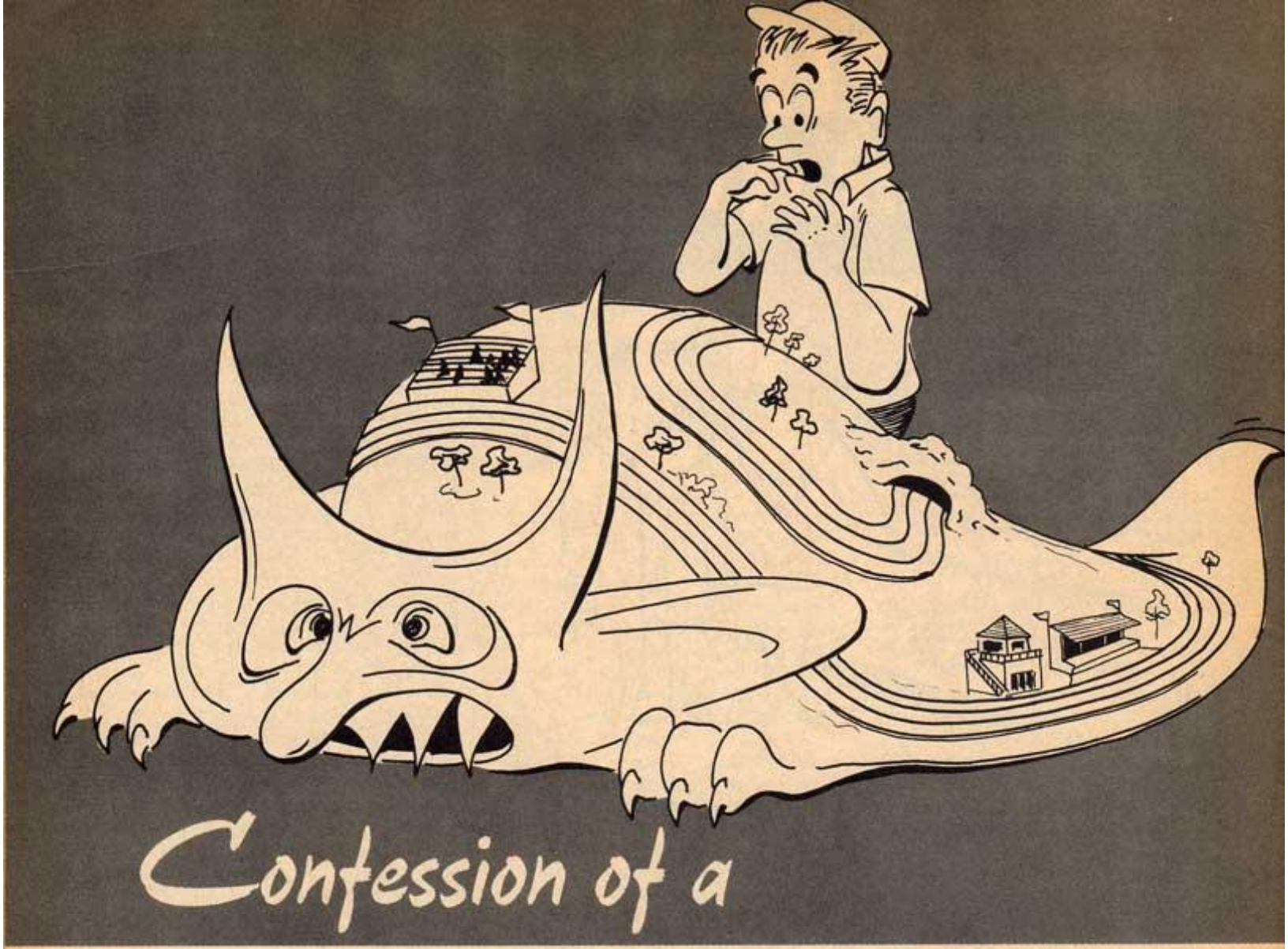
From another tape recorder came the sound of the crowd and we were ready to start. McTrack handed me the control buttons and the two cars roared off the starting line. Down the short straight and into the first corner. A fan blew some dust onto the track and some bits of paper. "Watch out for the paper . . . might plug your intakes . . ." The cars roared on. At one point, a toy dog ran across the track, pulled by a black thread, I guess. As we came around the grandstand for the second time I thought that I could see smoke emanating from his exhaust. "The timer in my car is setting off the smoke pellets," McTrack remarked quietly. On and on we raced, by now forgetting that this was not a real race. At one point an artificial rainstorm slowed us down (don't worry about the rugs, they are waterproof . . .) then at the 30th lap a dense fog greeted us just around the bookshelf. (Justa bit of dry ice). Pretty soon I came in for gas, a cool drink that is. McTrack expected this and roared ahead to win.

As he wiped the grease off his hands (onto his coveralls of course) he explained to me: Slot cars were just not realistic enough without the other effects. So he added the noise and smell of real car racing plus artificial hazards. The final effect was complete. All we needed to do was ride around the winner's lap with the wreath around the driver's neck. Then, McTrack excitedly explained that he was in the process of cutting a slot into the workbench surfaces at the plant where he worked so they could race during their lunchbreaks.

You know something? I believed him.



"How's that for authenticity?"



Confession of a DO-IT-YOURSELFER

by Raymond E. Hoy

I HAVE CREATED A MONSTER. Oh not just any run-of-the-mill monster that eats people and does ordinary foolishness like that, but a slot racing monster, and everyone knows that they are the worst kind. It does sinister things to me and it thinks, plans, and schemes all of the time.

What's that you say? An object made of wood, copper and wire can't do any of those things? Can't think, plan, or scheme? Phooey! Sorry chum, it would be hard to convince a drowning man that swimming is really healthy exercise, and I'm afraid it would be equally difficult to convince me that Lucifer (my lay-out) isn't really a thinking man's monster.

I still occasionally sneak into the dark depths of my basement and glare at Lucifer. He just stands there on his two good legs and glares back. Sometimes I walk cautiously around him (you see, I can't even refer to the thing as "it" anymore, it's HE and HIM!) and I dodge in and out and feint a few times, but I never try anything cute with him anymore. I'm a defeated man.

I've got many hobbies, but slotting heads the pack. It was only natural that I should be attracted to the sport since I have been a fanatical sports car fan since I was old enough to know the difference between boys and girls. I used to hang over the snow fence and drool on the Ferraris as they roared by, and since I knew that I could never afford to own a real one, I really jumped at the chance to own not just one, but a whole batch of the brutal little monsters for just a few bucks.

I started to build Lucifer before some bright soul came up with the idea of using a router to cut the slots that the cars follow. That means, dear friend, that I cut the slots by hand. Now, I am aware that I was not the very first fellow to cut a slot by hand, but I may as well have been because I had never even read an article on slot racing until after Lucifer was built. No, I don't live in a vacuum tube, there just weren't any magazines to be had on the sport where I lived when I started working on the THING. The Midwest now is a thriving hotbed of slot racing activity, but a few years ago it was barren as far as sports car racing was concerned, real or slot type.

I don't remember where I saw my first slot outfit. I believe it was one of the early English sets. Anyway, it started me thinking that I could build my own, and have a better lay-out too, so Lucifer was born.

I started out by buying two sheets of 8 x 4' tempered masonite, one-eighth of an inch thick. If only I had asked

for quarter inch! Curses! That was my first major blunder, but certainly not my last. I knocked together a couple of flimsy tables and laid two sheets of quarter inch plywood over the framework. That framework was my answer to the Bamboo curtain, and it certainly was a nasty answer. Everything wobbled like a snockered sailor on stilts. My second major blunder. Never build a flimsy table.

Well anyway, onward, I may as well finish my story. I screwed the masonite down and started devising a means to cut the slot. A machinist friend made up a cutting blade an eighth of an inch wide and I fitted it into a wooden handle. I had a screw adjustment to regulate the depth of the cut. Presto, I was in business. Later, Strombecker appeared with a similar item, and I figured one of their spies must have reported back that he had seen this glorious invention. Har-de-har! I wish I would have devised that little wooden monster and sold it to Strombecker and forgotten about the whole bit, but I didn't. Unlike Strombecker's little jewel, mine didn't work so good. However, I pushed on like a good little pioneer.

The first few cuts into the masonite were clean and easy. I almost broke my arm patting myself on the back. What a genius! Just about that time I started breaking through the eighth inch masonite and into that cross grained plywood. Now, at that time I didn't know how deep the slot should be, or I'd have stopped right then, all I knew was it didn't look deep enough to me. I figured, "I'll stop at a half inch." Great goof! I'd laugh now, but my back still hurts.

Well, to make a long story short, it took me four weeks of jamming that infernal cutter through that plywood. Nights of blisters, scores of curse words, (I even invented a few new ones) and an increasing barrage of remarks and dark looks from my wife. For instance, "My husband works in a communications office during the day, he also has a night job in our basement." You know how it goes. If you don't you're still single.

About this time things got real sticky. It looked good at first. On the night that I finished the last slot I emerged from the basement with the same look on my face that Grant must have had when he took Richmond. The slots were finished! That night I slept well. I had to, I was exhausted!

Ah zoe! From here on it would be clear sailing. This was the thought that was foremost in my mind as I cut the roadway out with a saber saw. I wanted to cut the track itself, separate from the big sheets of masonite, and then screw it to the plywood so it looked like an actual road paved on top of the ground. Well, when I cut through on each side of the roadway the whole thing just drifted apart. I had forgotten about the slot cutting clear through the masonite, and when I cut the roadway out of the main sheet of masonite, the thing just fell apart in four pieces. That started a long tedious period of carefully screwing it back onto the plywood, trying at all times to keep the slot uniform. Each hole had to be countersunk and then filled in with plastic wood and sanded smooth.

Finally that job was finished. Things were looking brighter. It was time to raise the fiendishly clever elevated section that I had designed into the circuit. I gave a mighty pull upwards on the straight-a-way section, (I wanted a nice h-i-g-h hill) and listened to the most sickening c-r-a-c-k that I had ever heard. I stood there transfixed, staring at the piece of loose board that quivered freely in my shaking hands.

Did you ever see a grown man cry? It's a humbling experience. Especially when you are the man doing the crying.

Ah well. I recover quickly. Anyway, real road circuits aren't perfectly smooth, they have ripples and bumps and like that, right? And it isn't as though I'd done a REAL bad job of patching, it's just that I hadn't done a real GOOD job either.

Now I was really steamboating. I laid out about $15 for copper tape and started taping the track. That was about the time I noticed the warping. My basement was damp you see, and this masonite just didn't take to that jungle climate. Nothing was too good for MY slot outfit, so Sears and Roebuck got a little richer, and I got a dehumidifier. I also purchased a small box of wire brads while I was in their store and drove about eight hundred of them into the roadway. That cured the warping. Yup, for about two days. Then, for some reason that escapes me, the little fiends started working up above the surface of the track. Try as I might, I couldn't get them to stay down. That started a plier operation that would have put a dental clinic to shame.

The dampness had also gotten to my copper tape. It had more buckles in it than a store full of horse saddles. In a few more days the tapes were as wrinkled as a ninety year old spinster. I began wielding a stick dipped in contact cement with such fervor that I looked like Toscanini. No dice. I finally lost my temper and ripped all of the tape off and knotted it in a little ball and threw it off into a corner.

Now you must understand this. By this time I had worked on Lucifer for over a month, and it was back-breaking labor too, and I still hadn't turned even one lap! That was before I had ever heard of braid, and I hadn't had any luck with copper tape, so I was really beginning to worry. I had to power the beast some how. Finally, inspiration! I bought a mountain of number 22 electrical wire and burned all of the insulation off. I took an ice pick and made a scratch all the way around the track on each side of each slot. I ran a bead of contact cement into this hand-hewn scratch and pushed the wire down into the groove. Zap! It looked great. Confidence flowed back into my empty tanks!

I feverishly hooked a battery to the track and set a car over the slot. I pressed the hand controller all the way down and watched my car expectantly. Nothing. Strange. I checked all the connections. Finally in desperation I gave the car a little shove. It jerked forward a foot or so, then another foot or so, and then stopped. I finally found out why. The scratch made by my ice pick was not uniform in depth, of course, (of course I say now, it is so obvious NOW) and the wire just disappeared below the surface of the track in places, escaping the pickup brushes.

Still not one lap. Then came the fatal day. A friend of mine stopped by and we stood together in the basement staring at Lucifer and mulling over ideas on how to get him working. His ten year old son leaned on the end of the table and one of the spindly legs gave way with a resounding roar. Splinters flew and boards cracked mightily and Lucifer came crashing down. I went screaming madly out of the basement.

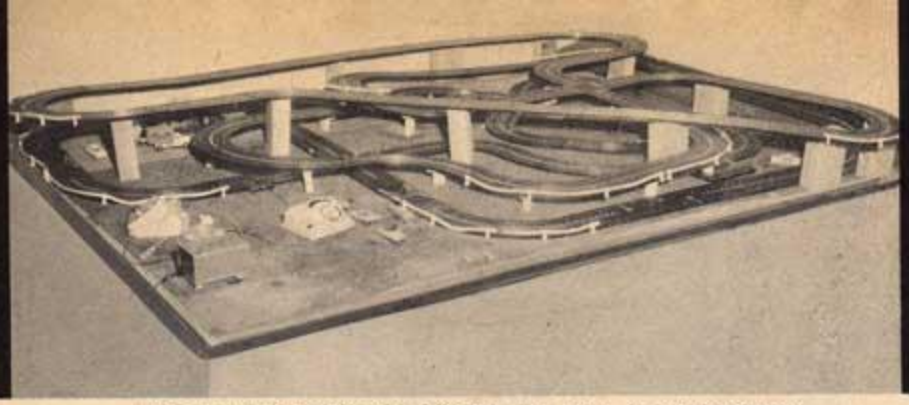
Down with slot-racing! Help stamp out slot cars! Those were the phrases I spouted for a couple of weeks after THE DAY, as they call it in the end-of-the-world movies. I gave up the whole mess and ignored Lucifer. To tell you the truth, I even felt sort of smug seeing him sprawled there on that dirty basement floor. Vengeance!

Well, that was quite awhile ago. We just sort of walked around the debris like it didn't exist. Then, a short while back I read an article in MODEL CAR SCIENCE on how to build a track. It looked so easy a child could do it. I had to try again!

It was as easy as it had looked. It took me from 8 a.m. on a Saturday morning to 10:30 p.m. that same night, to scratch build a rugged 16 x 4' table, lay out the track and route it and braid it. I completed the first lap the same day that I had started the track. I couldn't believe it. Modern science!

I am going to finish knocking Lucifer to pieces as soon as I mail this article. I know I'll be filled with mixed emotions. To tell you the truth, I doubt if that feeling of revenge will drown out that big lump in my throat.

THE END



H.O. HOBBYISTS:

MIKE SANFORD'S TRACK PROVES HO CAN BE INTERESTING.

APARTMENT DWELLERS "ARISE"! No need to journey to the hobby shop or pull your track from the closet and put it together every time you get the urge to burn rubber on the "asphalt:" build this 3′ x 6′ HO landscaped track with a straightaway, change-a-lane, two large and two small radii curves, a series of ess curves and a hill. It will give you all the action of driving a course three times as large and when not in use pulls up, out of the way near the ceiling. By decorating the underside with plastic grills, or vari-colored tiles you'll have a good looking mobile that will appease the lady of the house.

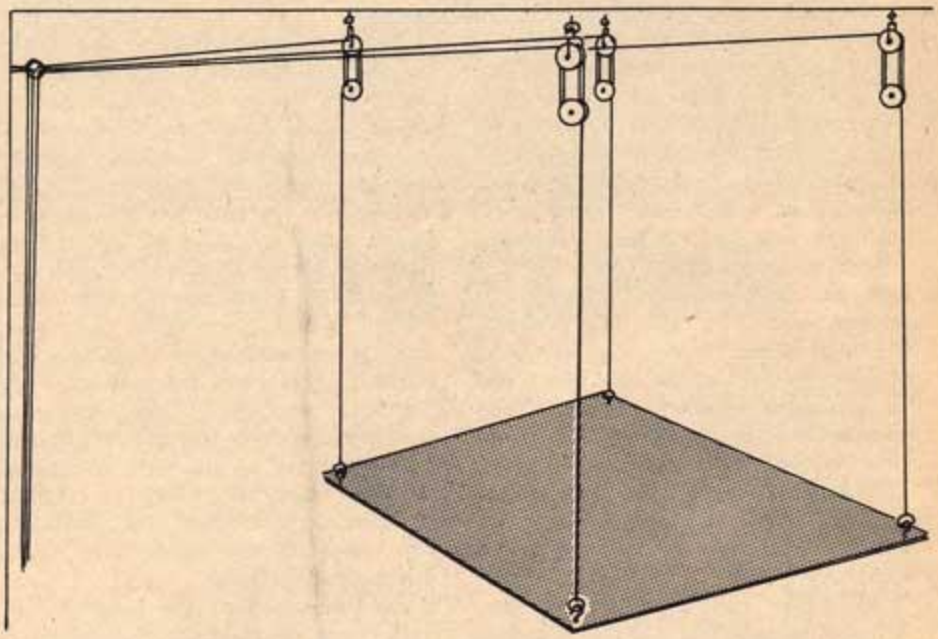
Track size depends on space available. This track (3′ x 6′) fits a spare single bed just right and does away with the need for legs. If you need legs, simple small saw horses that can be stored in a closet will do, or modern leg and metal base mounts can be bought at a hardware store. Table can be built of plywood but I nailed three 6′ lengths of scrap #2 pine shelving together using 1″ x 2″ fir strips to hold them together. These strips also double as the hill frames.

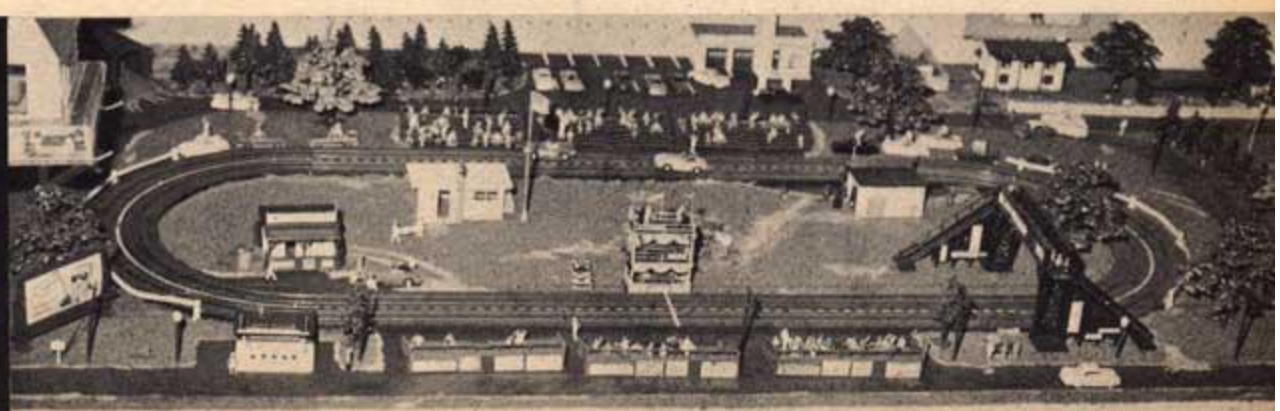
Sundays paper is used as the base for the plaster: use double thickness and crumble up before stapling or glueing to board. This will give a textured look when covered. When your paper is down, it's time to lay the track out. Do it according to the amount of track you have. You can either make it flat or use small wood blocks for hills, banked turns, etc., to your taste.

At your hardware or art store, get ten pounds of casting plaster, cost should be about .58¢. An old coffee can and spoon and you are in business. Mix in small quantities adding the plaster to the water until you have a thin watery paste. Spoon it on to the hills thinly and allow to set 10 minutes before building it up for strength. On the flatter spots pour directly from can and work out with spoon to the texture you want. Once you get going it's very easy to do and enjoyable to make small hills, gullies, etc. Don't worry if some plaster gets on the track. When it's dry you can lift it off with your finger nail; when spreading plaster remember that it is most important to mix in small batches and work quickly while spreading plaster. Before each batch, *wash can* and *spoon* even if you are doing the whole track at once. If not clean, old plaster will speed up hardening of the new plaster. At this time track is complete except for coloring, landscape, and hanging.

To complete the landscaping and hanging of your track, decide were it is to be placed. Over a bed or table will save the cost and labor of legs. You will need four small screw hooks (these are inserted at each corner of the base), and four large screw eyes (insert these in the ceiling in the same relation as the screw hooks). Also obtain four small pulleys and a length of small diameter white nylon cord or rope at a hardware or boating supply store. Rig pulley near ceiling and tie a small ring to slip over screw hooks on the base. This will permit you to detach pulley rope and pull it out of the way when using the table.

Paint the bottom of the table (that is





Landscaping adds the required realism to turn a simple HO track into a beautiful display of your hobby talents.

TRY THIS APARTMENT SIZE ROAD RACING COURSE

By Richard Howard

the side that will show when the table is pulled up) a flat black and mount white ceiling soundproofing tiles, checker board pattern to the underside. When the table is out of use, suspended near the ceiling, it is a very distinctive piece of decoration that blends in with any decor. You can vary the color and tile design to suit your taste and you will find it adds a conversation piece to your home.

Now we are ready for the last step, the landscape. Use your own judgment on buildings and trees remembering not to crowd the area too much. The following paint is required. 1/2 pint each grey, green, brown, and tan. Flat paint any type, vinyl, latex, enamel, etc. can be used. Use a one inch wide brush to apply. Start in the valleys with green, and blend to brown and then tan as you work toward the hills. Don't be afraid to experiment with blending the different colors. Remember nothing in nature is uniform and you can always paint over any mistakes. Use the grey to simulate stone on the hills. A box of Lychen (multi colored type) will put the finishing touches on your layout. Place it at random in clusters to simulate trees, bushes, etc. Total construction time was about ten hours and cost was under eight dollars and well worth it.

Material Needed:
10 pounds of casting plaster
5- 12"x12" Armstrong ceiling tiles
plywood or pine base 3x6
2- 3' sections 1/2" fir
1 box lychen
1/2 pint each flat gray, green, brown, tan, paint
1- 1" wide brush
4 small screw hooks- 4 large screw eyes- 4 small pulleys
small diameter white nylon cord (length will depend on ceiling height)
Miscellaneous — nails, newspaper, fences, buildings, trees, etc.

Wrinkled newspaper provides an excellent base for the plaster used to make landscaping.

SLOT RACER'S Work Shop

NEW IDEAS IN RACING MODIFICATIONS

By Raymond E. Hoy

I am quite sure there are many of you who have had a car returned from a mail-in event that was badly damaged as a result of over-exuberance in the Post Office department. I have found the solution to this frustrating problem.

The mail-in container that you see in the drawings offers complete protection for your car, be it 1/32 or 1/24. It is sturdily built and lined with foam rubber to protect it from bouncing around during shipment. The top is attached via four screws. Just slip your car into the contoured interior of the box, set the top on and screw it down. Believe me, the car can really take a lot of abuse without a bit of damage when it is sealed in something like this, while the same treatment in a cardboard container would be disastrous!

I made the end and side pieces out of 3/8" wood, (your choice) and the top and bottom pieces out of 1/4" wood. Start by cutting the bottom, top, and end pieces to the length and width shown in the drawings. Now take the top and bottom pieces and lay aside.

Note that the top and bottom pieces are recessed into the side and ends of the box so they lie flush with the extreme top and bottom dimensions of the box. This is done by cutting a 1/4" deep shoulder in the side and end pieces, on the side of each piece that faces INWARD. Do this by setting a table saw blade to 1/4" depth (the thickness of the top and bottom pieces) and by placing the guide fence of the saw a full 1/8" to the right of the blade. Make absolutely sure you measure this 1/8" from the right side of the blade. Now, when you place a piece of the side or end piece against the fence and run it through, it will give you a 1/4" shoulder cut. The blade of the saw is 1/8" wide, so that plus the 1/8" from the right side of the blade to the fence totals 1/4" Cut each side and end piece full length. When you have finished, you should have a 1/4" deep by 1/4" wide shoulder running the full length of each side and end piece, on the top and bottom sides.

Now cut each end of the sides and end pieces at a 45 degree angle. Be careful here, any sloppy workmanship will make assembly difficult.

Alright, you are doing fine. Use some furniture glue and small wire nails and put the box together, making sure that the entire box framework is square after you finish nailing. Now take the bottom piece and glue and nail it into place. That will provide a lot of rigidity to help keep things in line until it dries.

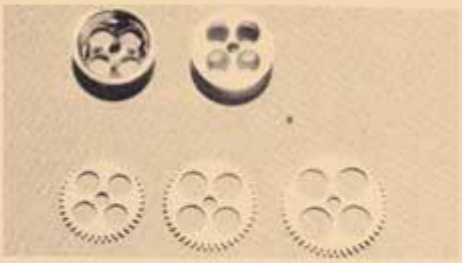
All we have left is the top piece. Remember, we want to keep this detachable, so we can't glue or nail this down. The top piece will slip right into its place in the top of the box of course, but we need some way to make sure it stays there during shipment. This is done by cutting four pieces of wood, 1/2" square by 2" long, and gluing on in each inside corner of the box. When they are dry, slip to top on the box and drill a tiny hole (just a pilot hole) through the top piece and down into the 1/2" square length of wood that you just glued in place. Remove the top once again, just to check and make sure that the pilot hole is about in the middle of the 1/2" square piece where it belongs. If it is, put the top in place once again and drill a hole big enough to accept whatever size machine screw you care to use (as long as it is about 2" long). Remove the top once again. Take the nut that goes with your machine screw, and epoxy it to the top of the 1/2" square uprights. This will be left permanently in place from now on, so that when the top piece is slipped into place and the machine screw slipped through the hole it will screw down into the nut that is epoxied in place on the uprights.

Now that you are finished with actual construction, glue some foam rubber or cellulose material from a sponge (they can be purchased in a dime store) on the top, bottom and side and end pieces. If you want to make sure your car really fits snugly, buy sponges meaty enough that you can carve them to the contour of your car.

I varnished the outside of the box with spar varnish. This makes it water proof. On the top piece I stenciled a small line of instructions in black paint that said "OPEN BY REMOVING SCREWS" and drew a small painted arrow pointing at one of the hold-down screws. To address it I installed the little

PRODUCT PROFILE:

Corben Model Car Racing Equipment



To most slot racing enthusiast, the name CorBen probably brings to mind either high quality or high price. If this is your opinion, then let's see what you really know about this equipment.

CorBen's slot racing products are manufactured to meet the same standards required for aircraft parts. These high standards are maintained because CorBen also does a large amount of precision manufacturing for the aircraft industry.

Stamped brass chassis, wide rear wheels with narrow fronts to match, precision cut gears, heat treated steel axles and a super lubricant known as "Go Juice" are all top items in the CorBen line.

Chassis made by CorBen are track tested for six months before going into full production. CorBen's five different chassis are made from a .032 half-hard brass. Admittedly heavy, this type of material is desirable because of its high tensile strength and solderability. Brass, with its high solderability content, gives a big advantage to the slot car builder because he can solder body mounts on the chassis without contact problems. The added weight is also a benefit as it helps the car to hold the track. By using high quality dyes to stamp out their chassis, CorBen contends that they can produce a chassis without distortion. One limiting factor for the CorBen chassis is that they are not fully adjustable to handle several different motors. CorBen chassis sell for $2.79 for the Pittman 196, and $3.25 for the DC-65, DC-70, 704A and Kemtron motors.

CorBen wheels are made from aluminum and are claimed to be true, round and eccentric. Once the aluminum wheel is put in the lathe, it isn't removed until completed with the exception of the polishing which is done by hand with a secret polishing compound.

Driving gears are made from brass to a very close tolerance to give the proper mesh. CorBen axles are made of a high tensile steel and heat treated for added strength.

To lubricate the gears in your slot car, CorBen has come up with their version of the 79¢ spread, better known as "Go Juice." When this oil is used properly, CorBen contends that you can increase the engine RPMs tremendously. Some of the ingredients of this lubricant consist of a de-oxidizer, a super lubricant, and a carrier lubricant. The de-oxidizer cleans while the super lubricant moves in to put a heavy coat of lube on the parts. If the car is run only once a week it is only necessary to lubricate it with this oil once before a night of racing.

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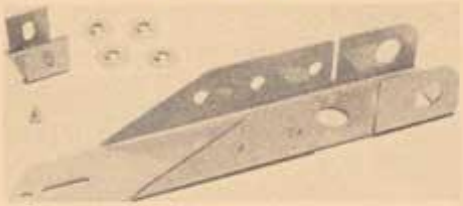

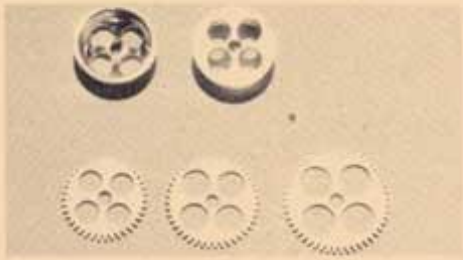

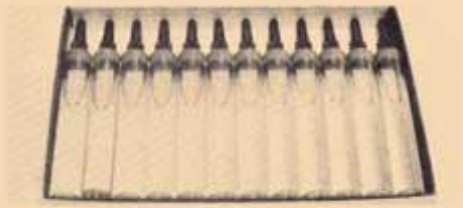

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SPEED
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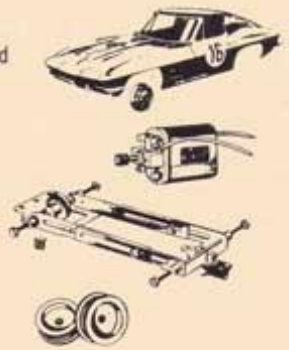

P.S. Revell model racing cars run on all popular 1/32 and 1/25 scale road racing tracks, including Strombecker, Scalextric, V.I.P., Airfix and Eldon, plus the standard British and American slot tracks.

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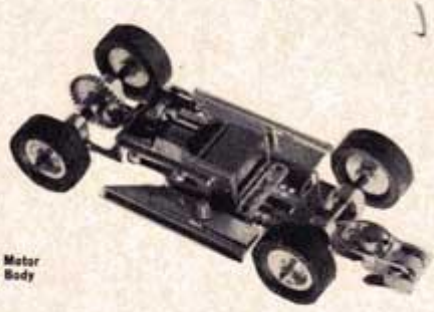

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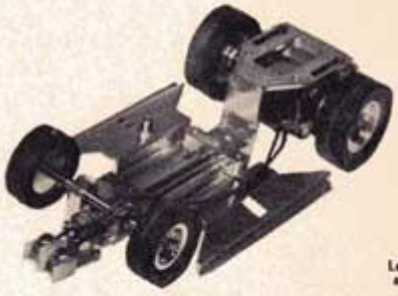

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